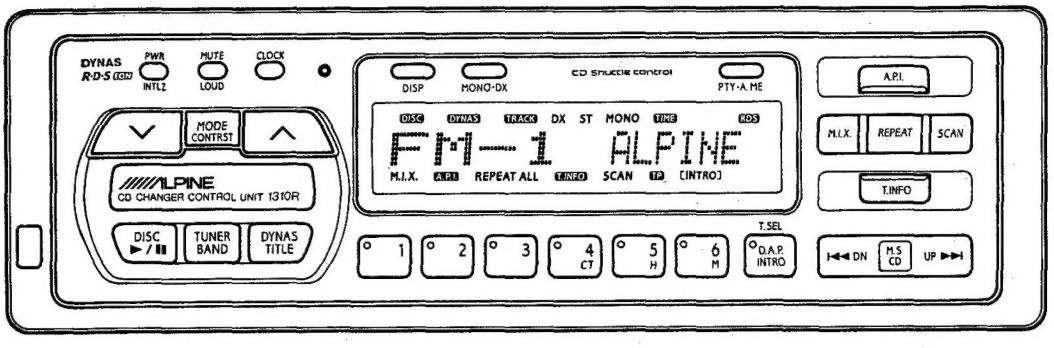
ALPINE®

SERVICE MANUAL

Digital FM/MW/LW/RDS Tuner

CD Shuttle Controller

- This model is Component System Unit of Tuner Unit and Display Unit.



1310R

Contents

Spare Schematic Diagram Inserted.

Specifications

<FM RADIO>

Intermediate Frequency	10.7±0.1MHz
Frequency Range	87.5~108MHz
30dB S / N Usable Sensitivity (Mono at 98.1MHz)	17.2dBf
-3dB Limiting Sensitivity (at 98.1MHz)	19.2dBf
S/N Ratio (Stereo at 98.1MHz)	56dB
Image Rejection (at 106.1MHz)	40dB
IF Rejection (at 90.1MHz)	60dB
Distortion (Input 60dBμ at 98.1MHz)	1%
Frequency Response (at 98.1MHz Ref. 400Hz)	100Hz : 0±3dB
	10kHz : -12±3dB
Stereo Separation (at 1000Hz)	20dB
Residual Noise (at 98.1MHz Ref. 400Hz)	30±5dB
PS Sensitivity (at 98.1MHz)	36.2dBf
TP Sensitivity (at 98.1MHz)	36.2dBf

<MW RADIO>

Intermediate Frequency	450kHz
Frequency Range	531~1,602kHz
Sensitivity 20dB S / N (at 999kHz)	34dB
S/N Ratio (at 999kHz)	44dB
Image Rejection (at 1,404kHz)	50dB
IF Rejection (at 603kHz)	60dB
Distortion (at 999kHz)	1.5%
Frequency Response (at 999kHz Ref. 400Hz)	100Hz : -3±4dB
	4kHz : -12+6-12dB

<LW RADIO>

Intermediate Frequency	450kHz
Frequency Range	153~281kHz
Sensitivity 20dB S / N (at 216kHz)	41dB
S / N Ratio (at 216kHz)	42dB
Image Rejection (at 270kHz)	40dB
IF Rejection (at 162kHz)	50dB
Distortion (at 216kHz)	1.5%
Frequency Response (at 216kHz Ref. 400Hz)	100Hz : -3±4dB
	4kHz : -12+6-12dB

<GENERAL>

Power Supply	DC14.4V
Load Impedance	10kohm
Pre Output Voltage (400Hz)	500mV
Semiconductors	Tuner Unit : 31 IC's, 58 Transistors, 18 Diodes, 10 Zener Diodes, 1FET
	Display Unit : 5 IC's, 4 Transistors, 4 Diodes
Dimensions (W×H×D)	Tuner Unit : 178.4×5.1×120 mm
	Front Escutcheon : 188×58×11.3 mm
	Display Unit : 171×47.5×25.8 mm
Weight	Tuner Unit : 800g
	Display Unit : 250g

Note : Due to continuing product improvement, specifications and designs are subject to change without notice.

ERROR INDICATION FOR CD SHUTTLE

INDICATION	CAUSE	SOLUTION
ERROR–1	Disc-change malfunction.	Consult your Alpine Dealer.
	Disc-change malfunction.	Press the magazine eject button and pull out the Magazine. Check for error indication. Insert the magazine again. If the magazine can not be pulled out, consult your Alpine dealer.
	Magazine ejection impossible.	Press the magazine eject button. If the magazine does not eject, consult your Alpine Dealer.
ERROR–2	Disc is in player mechanism.	Press the magazine eject button, and insert an empty magazine.
HOT	High temperature.	Will disappear when the temperature returns to operation range.
EEEE	Misconnection or disconnection of CD Shuttle.	Check connection between CD Shuttle and control unit.

INDICATION FOR 1310R

INDICATION	MEANING
NO MAGZN	The magazine is not installed into the CD Shuttle.
NO D I S C	No discs are in the magazine.

FEATURES

- **FULL FRONT DIN™ CHASSIS**
- **CD SHUTTLE* CONTROL**
- **DETACHABLE FRONT PANEL**
- **PROGRAMMABLE CODE-IN ANTI-THEFT**
  If the 1310R is ever stolen, it will not function until the proper code has been entered after reconnecting power.
- **BLINKING REMOTE LED OUTPUT-ANTI-THEFT READY**
  A remote LED may be mounted in the dash (or other conspicuous location) as a further theft deterrent. It will blink continuously once the ignition is turned off.
- **DYNAS SYSTEM**
  The DYNAS is an entirely new radio reception system which eliminates radio interference caused by adjacent channels and improves usable sensitivity in FM broadcasting reception. Consequently, with the DYNAS system switch turned ON, some broadcasting stations which are difficult to be received because of adjacent channel interference can be clearly heard with a conventional tuner.
- **INTRODUCTION MEMORY**
  Stores the first 5 seconds of each CD, of the 6 disc magazine, into solid state memory. This makes it easy to find the disc you desire.
- **CD TITLE DISPLAY**
- **M.I.X. (MUSIC IN "X" PLAY)**
  The tracks on disc will be played randomly.
- **REPEAT**
- **SCAN**
- **WIRELESS REMOTE CONTROL CAPABILITY**
- **DUAL ILLUMINATION**
  Backlighting for the front panel can be changed to amber or green.
- **S.T.M. (SOURCE TONE MEMORY)**
  Automatically memorizes the settings of your Bass/Treble Controls for each source.
- **DUAL PRE-AMP OUTPUTS**
  Dual pre-amp outputs and a pre-amp fader make system expansion easy and flexible.
- **30-STATION PRESETS**
  FM1 : 6, FM2 : 6, MW : 6, LW : 6, D.A.P.: 6

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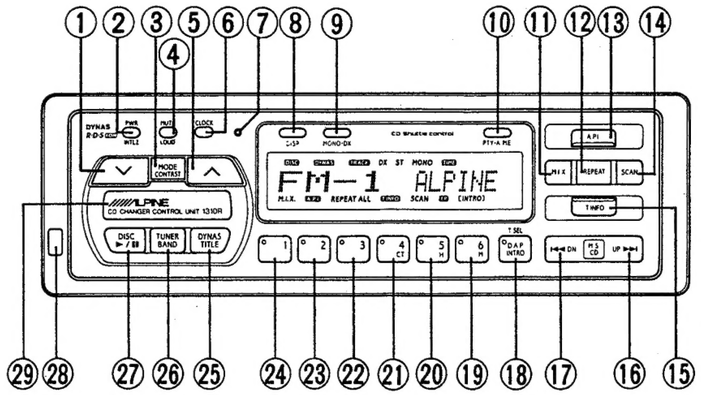
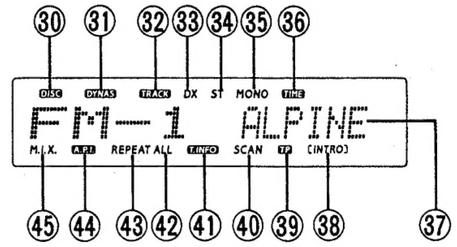
CONTROLS AND INDICATORS





CONTROLS AND INDICATORS

Listed below are all the Controls and their Indicators. Please see the Operation Section for explanations.

① **Level Down Button**
② **PoWeR/INiTiaLiZe Button**
③ **Audio MODE Select/CONTRaST Button**
④ **MUTE/LOUDness Button**
⑤ **Level Up Button**

⑥ **CLOCK Button**
⑦ **Reset Switch**
⑧ **DISPlay Button**
⑨ **MONO/DX (Local/Distance) Button**
⑩ **Program TYpe/Auto MEmory Button**

⑪ **M.I.X. Button**
⑫ **REPEAT Button**
⑬ **Auto Program Identification Button**
⑭ **SCAN Button**
⑮ **Traffic INFOrmation Button**

⑯ **M.S. • CD UP (⏭) Switch**
⑰ **M.S. • CD DowN (⏮) Switch**
⑱ **Direct Access Preset/INTRO/Time SELect Button**
⑲ **Preset and Direct Disc Access No. 6/ Minute Button**
⑳ **Preset and Direct Disc Access No. 5/ Hour Button**

㉑ **Preset and Direct Disc Access No. 4/ Clock Time Button**
㉒ **Preset and Direct Disc Access No. 3 Button**
㉓ **Preset and Direct Disc Access No. 2 Button**
㉔ **Preset and Direct Disc Access No. 1 Button**
㉕ **DYNAS/TITLE Button**

㉖ **TUNER/BAND Button**
㉗ **DISC (Play ▶/Pause ⏸) Button**
㉘ **Release Button**
㉙ **Sensor Window for Remote Control**
㉚ **DISC Indicator**

㉛ **DYNAS Indicator**
㉜ **TRACK Indicator**
㉝ **DX Indicator**
㉞ **STereo Indicator**
㉟ **MONO Indicator**

㊱ **TIME Indicator**
㊲ **Dot Matrix Display**
㊳ **INTRO Indicator**
㊴ **TP Indicator**
㊵ **SCAN Indicator**

㊶ **T. INFO Indicator**
㊷ **ALL Indicator**
㊸ **REPEAT Indicator**
㊹ **A.P.I. Indicator**
㊺ **M.I.X. Indicator**

OPERATION

The RDS data used are the PI, PS, AF, TP, TA, EON and PTY data.

PI: Program Identification code
Code identifying programs and consisting of a country code and a program code.

PS: Program Service name
Broadcast station name data expressed in alphanumerical characters of up to 8.

AF: Alternative Frequencies
Frequency list data for broadcasting stations transmitting the same program.

TP: Traffic Program identification
Identification data for traffic information broadcasting station.

TA: Traffic Announcement identification
Identification data showing traffic information is being transmitted or not.

EON: Enhanced Other Networks Information
Broadcasting information on PI, AF, TP, TA, etc. relating to networks other than the network used for current reception.

PTY: Program Type Code
Transmitting contents of programs such as a program ID code, news, light music, sports, etc.

RDS Function on the 1310R

The RDS data is used for the following operations:

- Auto tuning to the station in the network with the best reception is performed using the PI and AF data.
- The station name is displayed using the PS data.
- Traffic information is received automatically using the TP and TA data.

A.P.I. (AUTO PROGRAM IDENTIFICATION) OPERATION

1. Press the TUNER/BAND button ㉖ to set the FM mode. (The A.P.I. function does not operate on the MW and LW bands.)
2. Press the A.P.I. button ⑬. The A.P.I. indicator ㊹ appears on the display.
3. Press the UP or DN switch (⑯ or ⑰) for at least 0.5 seconds to start tuning.
4. When the reception of the station last tuned in becomes poor, the set automatically switches to another frequency broadcasting the same program with better reception. (The automatic follow operation does not function in areas where there is no broadcast network.)
5. Press the A.P.I. button ⑬ to cancel the A.P.I. mode.
   The A.P.I. indicator ㊹ on the display turns off, and the station display switches back to the frequency display.

NOTES:

1. With the A.P.I. button ⑬ in the on position, reception of an RDS station will result in automatic tracing of stations having the same broadcast contents.
2. When the A.P.I. button ⑬ is left on in the seek mode, the radio will also stop at non-RDS stations, but the display will continue to show a frequency.

OPERATION

A.P.I. 1/A.P.I. 2/PS ONLY MODE

This unit has employed two modes of A.P.I. 1/A.P.I. 2 as automatic tracing systems and PS ONLY mode as non-automatic tracing system, so use one of the modes depending upon status of broadcasting networks, reception status, and other environment.

1. Press the DISP button ⑧ for 3 seconds.
2. Press the Preset No. 3 button ㉒ to switch among A.P.I. 1, A.P.I. 2 and PS ONLY.

[A.P.I. 1] Mode

- When the reception status becomes poor, the unit is automatically switched to a station which provides good reception status.

NOTE:

Under certain conditions of broadcasting stations, the unit will be switched to another program station for an instant time of period.

[A.P.I. 2] Mode

- If erroneous operation occurs with A.P.I. 1 mode selected, switch the mode to the "A.P.I. 2" mode.

NOTES:

1. When switching from a station which provides poor reception condition to the other station which provides good condition, the MUTE function works to check whether the switched station is the same station.
2. When moving from the station providing poor reception condition to a good station, the MUTE function successively works for a specified interval if a station providing good reception condition does not exist. In such a case, turn off the A.P.I. or try to tune in another station.
3. In the A.P.I. 2 mode, the AF and PI are checked again to search the AF station without fail, so, a longer muting period (about one sec) than that in the A.P.I. 1 mode is necessary.

[PS ONLY] Mode

- The PS ONLY mode executes only the display of broadcasting station name.
- In this mode, automatic tracing operation is not executed. Only the manual tracing operation described below can be executed.

OTHER CONVENIENT FUNCTIONS

Manual Tracing Operation

This operation is used in case of slow tracing in each automatic tracing mode and PS ONLY mode. In the operation, AF will be searched instantly and the station which provides good reception condition will be selected.

1. When the A.P.I. button ⑬ is pressed for two seconds while in the A.P.I. mode (when the A.P.I. indicator ㊹ on the display is on), reception switches to the station included among the AF data which is broadcasting the same program with the best reception.
2. "AF SEEK" is displayed during this operation.
3. When the operation is completed, "SEEK END" appears on the display.

OPERATION

Setting the PI in the Preset Memory

1. Tune in an RDS station and set the display to the station name display.
2. Press one of Preset buttons 1 to 6 for two seconds.
3. The station name flashes for 5 seconds. Press the Preset button at which you want to store the PI while the display is flashing. The PI is now stored in the memory.
4. Set other Preset buttons in the same way.

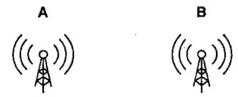
- If a Preset button at which a PI is stored is pressed, the station name will be displayed.
- If the same PI program cannot be received at the first preset recall, "AF SEEK" operation will be executed automatically.
- In case of bad reception condition at the first preset recall, press the preset button again and "PI SEEK" operation will be executed automatically.
  During this operation, "PI SEEK" will be displayed and the broadcasting station of the same PI and another frequency will be searched.
- If a station broadcasting the same program cannot be tuned in, reception returns to the original frequency and the preset indicator turns off.

REGIONAL PROGRAM OPERATION

Some broadcast stations will change from normal broadcasting to regional broadcasting for a certain time period.

[Example]

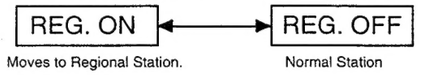
A station A broadcasts the regional program "WDRG" from 9:00 to 10:00 and the station broadcasts the normal program "WDR2" for the time period except for 9:00 to 10:00.



Program	Station A	Station B	Time Period
Regional Program	WDRG	WDRE	9:00 to 10:00
Normal Program	WDR2	WDR2	Time period except for above.

PI area code will change when the normal broadcasting is switched to the regional broadcasting. This operation allows selection of the function which moves to the regional station or remains in the normal broadcasting.

1. Press the DISP button ⑧ for 3 seconds.
2. Press the Preset No. 4 button ㉑ and the dot matrix display shows REG. ON or REG. OFF.
3. To switch the REGIONAL ON/OFF, press the Preset No. 4 button ㉑.



RDS auto memory function

Six RDS stations can be stored in the preset memory in order according to the best reception conditions. Set to the RDS station reception mode. Press the A. MEMO button ⑩ for more than 2 seconds to start the auto memory operation.

CAUTION:

The PI and PS data stored in the memory are cleared when the auto memory function is used, so set them in the memory once again.

TRAFFIC INFORMATION FUNCTION

With this function, traffic information can be received automatically from any mode. This function operates using the RDS TP and TA signals.

Traffic information being broadcasted through other network can be received by using EON signal.

To receive traffic information:

1. Press the TUNER/BAND button ㉘ to set the FM mode. (The traffic information function does not operate on the MW and LW bands.)
2. Press the T. INFO button ⑮. The T. INFO indicator ㊶ appears on the display. The TP indicator ㊴ lights when a traffic information station is received regardless of the traffic information mode.
3. Press the UP or DN switch (⑯ or ⑰) to start searching. The set automatically searches for a traffic information station. Once the station is tuned in, the TP indicator ㊴ appears on the display.
4. The following appears on the display when traffic information is received:

TRF . INFO

NOTE:

When a reception signal strength is poor during the traffic information reception, the function which holds the traffic information reception mode works for 1 minute.

If no information is received for 1 minute, the traffic information reception mode is automatically cancelled and the unit returns to the original mode. If a traffic information termination signal is received during the hold period, the unit also returns to the original mode.

5. If traffic information is received while a CD is playing, the CD is automatically paused and the traffic information can be heard. Once the traffic information is over, the set returns to the previous mode.
6. If traffic information is received when the volume control is set at the minimum, the volume is automatically set to the preset level while the traffic information is being received.

Four preset volume levels can be set for traffic information reception

(1) Press the DISP button ⑧ for 3 seconds.
(2) Press the Preset No. 2 button ㉓ to switch between TA-LV 4 to TA-LV 1. Select the desired level.

TA - LV 1

7. When the reception of the broadcast station currently tuned in becomes poor, the TP indicator ㊴ turns off and the set is set to the following state:
   (1) An alarm is sounded after traffic information stations can no longer be received (the TP indicator ㊴ turns off).
   If a CD is playing, it is paused automatically and the alarm is sounded.
   (2) Use the manual tuning, seek, or auto memory functions to tune in another station.
   (3) When the set is in the seek mode, if the UP or DN switch (⑯ or ⑰) is pressed for at least 0.5 seconds, the set only searches for traffic information stations. It either finds a traffic information station or continues searching until the seek mode is canceled.

8. The set operates as follows if both the traffic information and A.P.I. modes are set: The automatic follow operation is performed for stations broadcasting the same program which are also traffic information broadcast stations.

When traffic information stations cannot be received:

In the tuner mode:
When the TP signal can no longer be received, an alarm will be sounded after 1 minute.
In the CD or EXT mode:
When the TP signal can no longer be received, the traffic information station of another frequency will be selected automatically.

PTY (PROGRAM TYPE) FUNCTION

With PTY function, the program type currently received will be displayed and the station which broadcasts the desired program type can be searched automatically.

PTY Display Operation

1. Press the TUNER/BAND button ㉖ to set the FM mode.
2. Press the PTY button ⑩ to access the PTY mode.
3. The program type currently received will be displayed on the dot matrix display ㊲.
   NOTE:
   "NONE" will be displayed when the receiving condition is bad or when the station provides no PTY data broadcasting. And after 5 seconds the PTY mode will be released automatically.
4. To release the PTY mode, press the PTY button ⑩.

PTY Seek Operation

1. Press the PTY button ⑩ to access the PTY mode.
2. Select the desired program type with the UP or DN switch (⑯ or ⑰).

[Example]

Type	Classics	Other Music	Music	Speech	News
Display	CLASSICS	OTHER M	MUSIC	SPEECH	NEWS

3. The dot matrix display ㊲ will be blinking and the station which broadcasts the desired program type will be searched.
4. When the desired station is received, blinking will be stopped automatically.
   NOTE:
   "NO PTY" will be displayed when the desired station fails to be searched, and after 5 seconds the PTY mode will be released automatically.
5. Normally, the PTY mode will be released automatically unless any button is pressed within 5 seconds.

● **RADIO OPERATION**

Tuning Band Selection

Press the BAND button ㉕ to select the desired tuning band. The Band indicator shows your selection.

DYNAS System Mode

The DYNAS system has two modes; DYNAS 1 and DYNAS 2. Set either one of the mode which provides good reception according to procedures shown below. Then, the DYNAS system allows you to receive clearer reception of FM broadcasting. In a noisy and sound distorted area, set to DYNAS 2.

1. Press the DYNAS button ㉔.
   "DYNAS 1" will appear on the display.
2. Press the DYNAS button ㉔ for more than 2 sec., and "DYNAS 2" will appear on the display (and DYNAS 1 mode is switched to DYNAS 2 mode).
3. To release the DYNAS system mode, press the DYNAS button ㉔.

NOTE:

If distortion and noises higher than those obtained in normal reception are heard, set the DYNAS mode to OFF. The increased distortion and noises will be caused in many cases by reasons shown below.

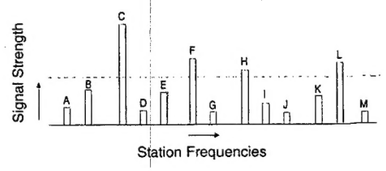
1. When reception frequency is deviated
   In the 1310R, a reception frequency is received in the step of 0.05 MHz, so ±0.025 MHz deviation may be caused depending upon broadcasting stations.
2. When transmission signals are overmodulated in broadcasting stations
   Some broadcasting stations may be transmitting signals with increased modulation depth to increase sound level.

Local/Distance (DX) Seek Sensitivity for FM, MW and LW

You can select the radio seek sensitivity (local or distance (DX)), by pressing the DX (distance) button ⑨ for more than 2 seconds.

In the local mode, with no DX indicator ㉝, the radio tunes in only strong stations (stations C, F, H and L in the illustration below).

In the distance mode, with DX indicator ㉝, the radio tunes in both strong and weak stations (all stations from A to M in the illustration).



OPERATION

FM Stereo/Monaural Switching

You can select between the auto switching or monaural only modes for FM reception by pressing the MONO button ⑨. In the auto switching mode, you can receive stereo broadcasts in stereo and monaural broadcasts in MONO. In the monaural mode, you will receive the broadcast in monaural only, even if the broadcast is in stereo. The monaural only mode quiets the noisy stereo signal of weaker broadcasts. The ST indicator ㉞ will not appear while the monaural mode is selected.

Manual and Auto Seek Tuning

Stations can be tuned in using the procedures described below.

1. Select the tuning band (FM1, FM2, MW or LW) with the BAND button ㉘. The Band indicator shows your selection.

   ┌→FM-1 → FM-2 → MW → LW ┐
   └──────────────────────┘

2. Decreasing the frequency:
   The frequency is decreased by one step each time the DN switch ⑰ is pressed.
   By pressing and holding the switch for at least 0.5 seconds, the unit will automatically tune the first station it finds in the direction of decreasing frequency.
3. Increasing the frequency:
   The frequency is increased by one step each time the UP switch ⑯ is pressed.
   By pressing and holding the switch for at least 0.5 seconds, the unit will automatically tune to the first station it finds in the direction of increasing frequency.

Preset Memory Programming

Follow the instructions below to program stations into preset memory:

1. Select the tuning band (FM1, FM2, MW or LW) with the BAND button ㉘.
2. Tune in your desired station using manual or auto seek tuning.
3. Press the Preset button number 1 ㉔ for more than 2 seconds.
4. The preset indicator and the dot matrix display ㊲ will begin to blink. Press that Preset button again while the display is blinking (within 5 seconds).
5. The frequency you selected will be placed into preset memory number 1 and will appear in the display.

   NOTE:

   If a preset memory has already been set in the same address, it will be cleared and the new station will be memorized.
6. Follow steps 2 – 4 for the remaining presets (2 – 6). Use this procedure for FM1, FM2, MW and LW.

Auto Memory Preset

1. Select the desired tuning band (FM1, FM2, MW or LW) with the BAND button ㉘. The Band indicator shows your selection.

   NOTE:

   The auto memory preset procedure is allowed in the D.A.P. mode.
2. Press the A. MEMO button ⑩ for over 2 seconds.

OPERATION

3. The tuner will automatically seek the 6 strongest stations in the selected band and memorize them in order of their signal strength. These stations are automatically placed in the preset memory with the strongest station in preset No. 1 and the 6th strongest station in preset No. 6. When seeking stations, the tuner first seeks in the local tuning mode. If less than 6 stations are memorized, the tuner seeks again in the distance (DX) mode.
4. After finishing the auto memory preset, the tuner goes to the station placed in preset memory No. 1. If no stations are memorized, it returns to the original station you were listening to before the auto memory preset procedure began.

Preset Tuning

After the preset stations have been memorized, you can tune in your desired station (within the band displayed) with one touch of a button.

1. Select the tuning band (FM1, FM2, MW or LW) with the BAND button ㉘.
2. Press any one of the Preset buttons (⑲ – ㉔) and the number of that preset will appear in the preset display ㊲.
3. The frequency of the station placed in the selected preset location will appear in the display.

D.A.P. (Direct Access Preset)

This feature allows the storage of FM, MW and LW presets on the same band.

1. Press the D.A.P. button ⑱. The D.A.P. indicator will appear in the display.
2. To program stations into the D.A.P. band, follow steps 1 – 4 as described in the Preset Memory Programming section on page 20.

Accessing the D.A.P. Presets

1. Press the D.A.P. button ⑱. The D.A.P. indicator will appear in the display.
2. Press one of the Preset buttons (⑲ – ㉔).
3. The frequency of the station placed in the selected D.A.P. location will appear in the display.

Switching the FM Volume

Use this function if the difference in volume is great when switching between a CD and the FM radio.

1. Press the DISP button ⑧ for 3 seconds.
2. Press the Preset No. 1 button ㉔ to switch the display between "FM-LV Hi" and "FM-LV Lo".
   The FM volume can be set to one of two positions, high or low. Set the position according to the broadcast station.

FM-LV Hi ⟷ FM-LV Lo

OPERATION

● **CD OPERATION**

The following instructions apply only to systems that incorporate the Alpine CD Shuttle with 1310R.

Turn the unit On and access the CD mode by pressing the DISC (▶/II) button ㉗.

Normal Play

1. Press the DISC (▶/II) button ㉗.
2. The first disc will begin playback.
3. After the last track on the last disc is played back, the pickup will return to the beginning of the first track of the first disc and begin playback from that point.

On the DISPLAY

Pushing the DISP button ⑧ in the DISC mode will change the display from Elapsed Time to Title display. See below.

Disc No., Track No., Elapsed Time → Disc No., Track No., Title display → ···

NOTES:

1. The title display will work only with discs for which the titles have already been registered. (Refer to page 25.)
2. In the A.P.I. or T. INFO mode, even if the DISP button ⑧ is pushed, the display can not be switched. The mode will be set to the tuner mode and the tuning is possible.

Pause

While the disc is playing, press the DISC (▶/II) button ㉗ to temporarily stop playback. The dot matrix display ㊲ will show "PAU". To resume playback, press the DISC button (▶/II) ㉗ again.

Music Sensor (Skip)

This feature allows you to access the beginning of your musical track selection simply and quickly. It is functional in the play or pause mode. The dot matrix display ㊲ shows the track number you have selected.

• To advance to the next track on the disc, press the UP switch ⑯.

1. Playback stops, and the pickup moves up to the beginning of the next track. That track number appears in the dot matrix display ㊲.
2. Playback begins immediately.
3. If you wish to access a track further ahead on the disc, continue pressing and releasing the UP switch ⑯ until you reach the track of your choice.

• To replay the track that is currently playing, press and release the DN switch ⑰.

1. Playback stops, and the pickup moves back to the beginning of the current track. The track number in the dot matrix display ㊲ remains the same.
2. Playback begins immediately from the beginning of the track.
3. If you access a track further towards the beginning of the disc, continue pressing and releasing the DN switch ⑰ until you reach the track of your choice.

Direct Disc Access

1. Press one of the Direct Disc Access buttons (⑲ – ㉔) to select from discs 1 – 6. The disc and track numbers will appear in the display.
2. Press the UP ⑯ or DN ⑰ switch for musical track selection.

Fast Forward/Fast Backward

The fast forward/fast backward feature works in the play mode only.

1. Press either the UP ⑯ or the DN ⑰ switch and hold it down for more than 1 second.
2. To move the pickup forward rapidly, hold down the UP switch ⑯.
3. To move the pickup backward rapidly, hold down the DN switch ⑰.
4. Release the button when you get to the desired position on the disc.
5. When the pickup reaches the end of the disc, it will begin playback from the beginning of the first track on the next disc.

Repeat (One/All)

This feature allows you to continuously repeat a single track or one entire disc.

To Repeat a Single Track

1. Locate the music track of your choice using the UP ⑯ or DN ⑰ switch.
2. Press the REPEAT button ⑫.
   The REPEAT indicator ㊸ will illuminate.
   The music track will be played back repeatedly.
3. To stop repeat play, press the REPEAT button ⑫ twice.

To Repeat an Entire Disc

1. While playing a disc, press the REPEAT button ⑫ until the ALL indicator ㊷ will illuminate.
2. The disc will be played back repeatedly.
3. To stop repeat play, press the REPEAT button ⑫ once. The indicator illumination will be off.

Disc Scan

Press the SCAN button ⑭ and the unit will playback the first 10 seconds of each track in succession. This function is useful in searching ahead on a disc for a specific selection. Pressing the SCAN button ⑭ a second time deactivates the function.

M.I.X. (Random Play)

Press the M.I.X. button ⑪ while the unit is in the play or pause mode. Musical tracks on the selected disc will be played back in a random sequence generated by the micro-processor. After all the tracks on the disc have been played back once, the player will begin a new random sequence.

Programming CD INTRO Memory

The first 5 seconds of each disc in a magazine can be memorized in IC memory. This allows you to listen to the beginning of each disc without actually changing it. Thus, you can identify a disc quickly and easily.

A short delay of the recording start time can be selected. This works well with discs which do not have music, for short periods, at the very beginning.

1) Press and hold the PWR button ② for more than 2 seconds.
2) Push T. SEL button ⑱. Each time you push the button, the display will change from "0" to "10" seconds in the order shown below:
   "0" → "5" → "10" → "0" → ···
3) Once the desired delay is shown in the display, push the PWR button ② again to make the selection and return to the normal mode.
   Indication 0: Mute length of 0 to 5 sec.
   Indication 5: Mute length of 5 to 10 sec.
   Indication 10: Mute length of 10 to 15 sec.

INTRO memory

1. Push the INTRO button ⑱. Recording for each disc will start.
2. When the recording completes, "[INTRO]" is displayed, telling you the INTRO mode is being actuated. In the "INTRO" mode, the introduction section will be played back each time you select a disc.
3. To cancel the "INTRO" mode, push the INTRO button ⑱ to turn the display to "INTRO".

NOTES:

1. Quality of the sound obtained from the introduction memory is lower than the normal sound quality because of the small amount of IC memory available.
2. Contents of the memory will be erased if the battery lead is removed, reset operation is conducted, or the current magazine is replaced.
3. When using the Digital Audio Output of the 5959S to the Digital Input of any of Alpine's Digital Processors, follow the steps below to ensure proper operation of the INTRO Memory feature:
   a) Attach a model 4913 to the Changer Input of the Digital Processor
   b) Connect the DIN and Analog Audio Outputs of the 5959S to the 4913
   c) All other connections are per instructions in Owner's Manual for each Digital Processor.

CD Title Display

A title (up to 8 characters) can be given to each disc, to be displayed whenever that disc is selected.

Inputting the Title

1. Press and hold the TITLE button ㉕ for more than 2 seconds to set the CD title mode.
2. Select a disc with the DIRECT DISC SELECT buttons (⑲ – ㉔).
3. Enter characters with buttons (⑪, ⑬ – ⑮).

How to use the buttons (⑪, ⑬ – ⑮)

1) Use the M.I.X. ⑪ or SCAN ⑭ buttons to select the character position.
2) Push the A.P.I. ⑬ and T. INFO ⑮ buttons to select characters and numerals.
4. After confirming the correct title, press and hold the TITLE button ㉕ for more than 2 seconds to store.

NOTE:

Data for up to 42 discs can be written. If the number of discs exceed 42, "FULL TITLE" will be displayed. In such a case, erase the titles for less used discs to free required space. You can now perform the operations listed above.

Recalling a Registered CD Title

While a CD is playing, pressing the TITLE button ㉕ will display its title for 5 seconds.

Deletion of Registered CD Title

1. Press and hold the TITLE button ㉕ for more than 2 seconds to enter the CD title mode.
2. Push the DISP button ⑧ to show the titles in the display.
3. Push the UP/DowN button ⑯ or ⑰ to call out the title to be deleted.
4. Press and hold the DISP button ⑧ for more than 2 seconds to delete the title.
5. Push the TITLE button ㉕ for more than 2 seconds to return to the normal mode.

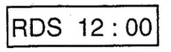
NOTE:

For deleting the CD title other than procedures above (1 – 5), enter " " (8 spaces).

● **CLOCK OPERATION**

RDS Clock

1. Press the CLOCK button ⑥. The clock time will appear on the display.
2. The clock is automatically corrected, the dot matrix display ㊲ showing "RDS", when RDS CT data is received.



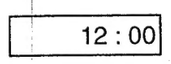
NOTE:

If the RDS signal in reception is weak, the time adjustment by RDS function may require a little longer time.

3. If the unit shows incorrect time caused by a wrong signal, adjust the time manually by referring to "Setting the Time" below.

Normal Clock

1. Press and hold the CLOCK button ⑥ for more than 3 seconds.
2. Press the CT button ㉑ to deactivate the RDS function.
3. Adjust the time by referring to the "Setting the Time" below.



Setting the Time

1. Press and hold the CLOCK button ⑥ for more than 3 seconds to enable the time adjust mode. The time display will blink when ready for setting.

NOTE:

Make adjustments for 5 seconds blinking.

2. Adjusting the hours:
   Use H button ⑳ to adjust the hours.
3. Adjusting the minutes:
   Use M button ⑲ to adjust the minutes.

Adjustment Procedures

1 FM SECTION

(1) Dummy Antenna Circuit

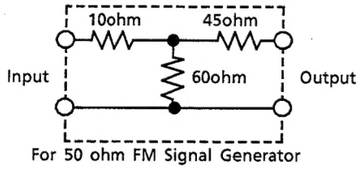


Figure 1

(2) Connections

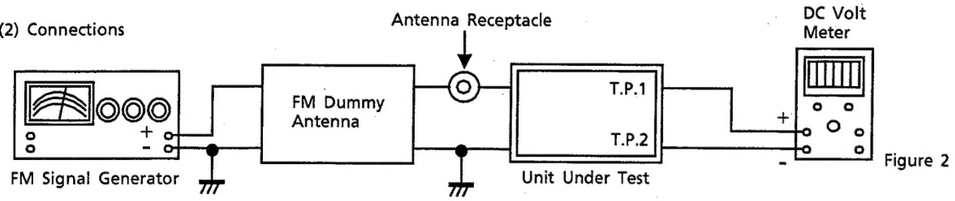


Figure 2

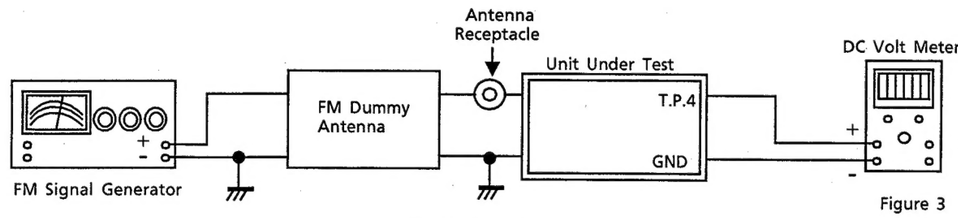


Figure 3

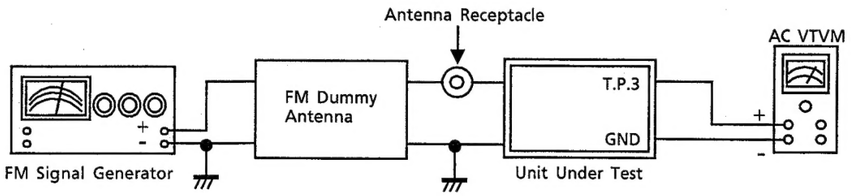


Figure 4

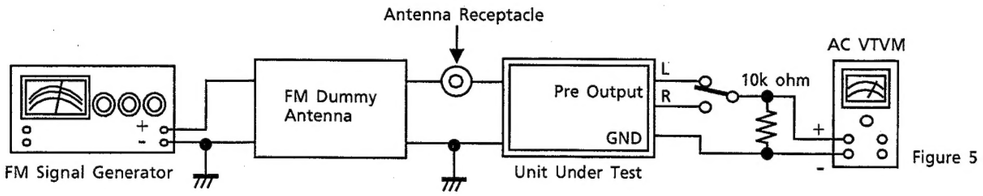


Figure 5

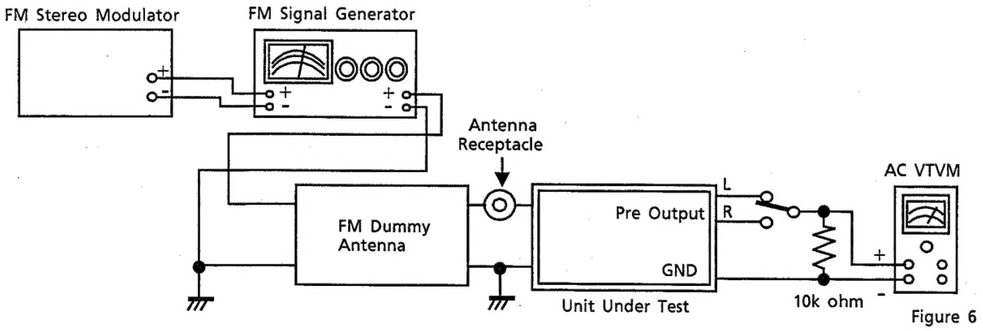


Figure 6

(3) Control Settings

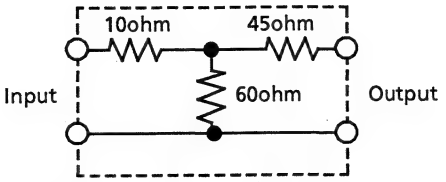
Power Switch ..... ON
Fader Control ..... Center Position
Balance Control ..... Center Position
Treble / Bass Control ..... Center Position
Band Switch ..... FM
Others ..... OFF

(4) Adjustment Procedures

Step	Description		Connection	Signal Generator	Dial Control	Test Point	Adjustment
1	IF Adjustment		Figure 2	98.1MHz, 72dB (Mod. OFF)	98.1MHz	T.P.1 T.P.2	Adjust L2101 to 0±5mV.
2	Signal Meter Adjustment		Figure 3	98.1MHz, 46dB (Mod. 400Hz)	98.1MHz	T.P.4	Adjust VR2101 to 3±0.3V.
3	Noise Level Adjustment	(1)	Figure 5	98.1MHz, 72dB (Mod. 400Hz)	98.1MHz	Pre Output	Adjust S401, 402 (LEVEL DOWN / UP SWITCH) to obtain 500mV output. This value is 0dB.
		(2)	Figure 5	98.1MHz, - 19dB (Mod. 400Hz)	98.1MHz	Pre Output	Adjust VR2106 to 30±5dB output at SG level minimum.
4	Seek Stop Adjustment		Figure 4	98.1MHz, 72dB (Mod. OFF)	98.1MHz	T.P.3	Adjust VR2105 to obtain 27±5dB.
5	Stereo Separation Adjustment (Lch)		Figure 6	98.1MHz, 72dB (Stereo 1kHz, Lch only)	98.1MHz	Pre Output	Adjust VR2104 for Rch output to be minimum and confirm Lch and Rch output level difference is more than 20dB.
6	Stereo Blend Adjustment (Lch)		Figure 6	98.1MHz, 46dB (Stereo 1kHz, Lch only)	98.1MHz	Pre Output	Adjust VR2102 for Lch and Rch output level difference to be 8± 2dB.
7	Stereo Separation Adjustment (Rch)		Figure 6	98.1MHz, 72dB (Stereo 1kHz, Rch only)	98.1MHz	Pre Output	Proceed same adjustment under step 5 by alternating Lch and Rch.
8	Stereo Blend Adjustment (Rch)		Figure 6	98.1MHz, 46dB (Stereo 1kHz, Rch only)	98.1MHz	Pre Output	Proceed same adjustment under step 6.

2 DYNAS SECTION

(1) Dummy Antenna Circuit



For 50 ohm FM Signal Generator

Figure 7

(2) Connections

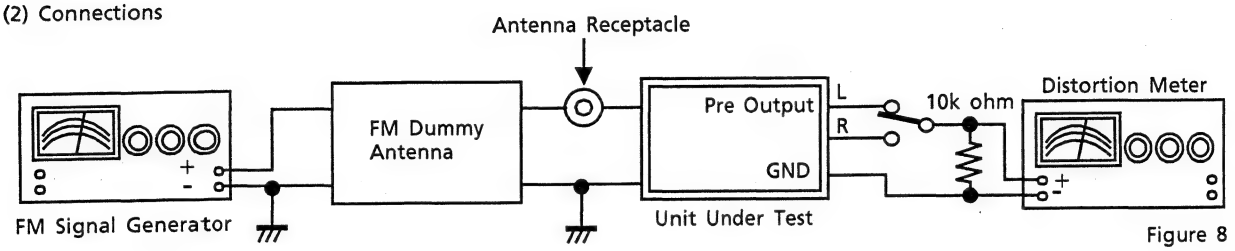


Figure 8

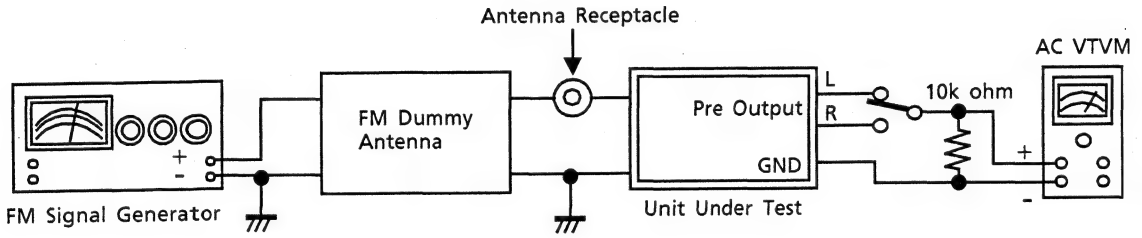


Figure 9

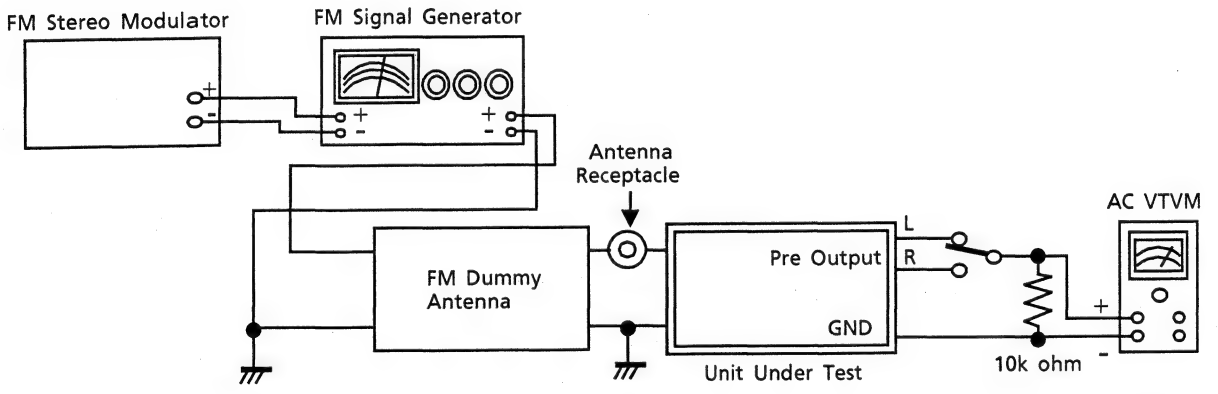


Figure 10

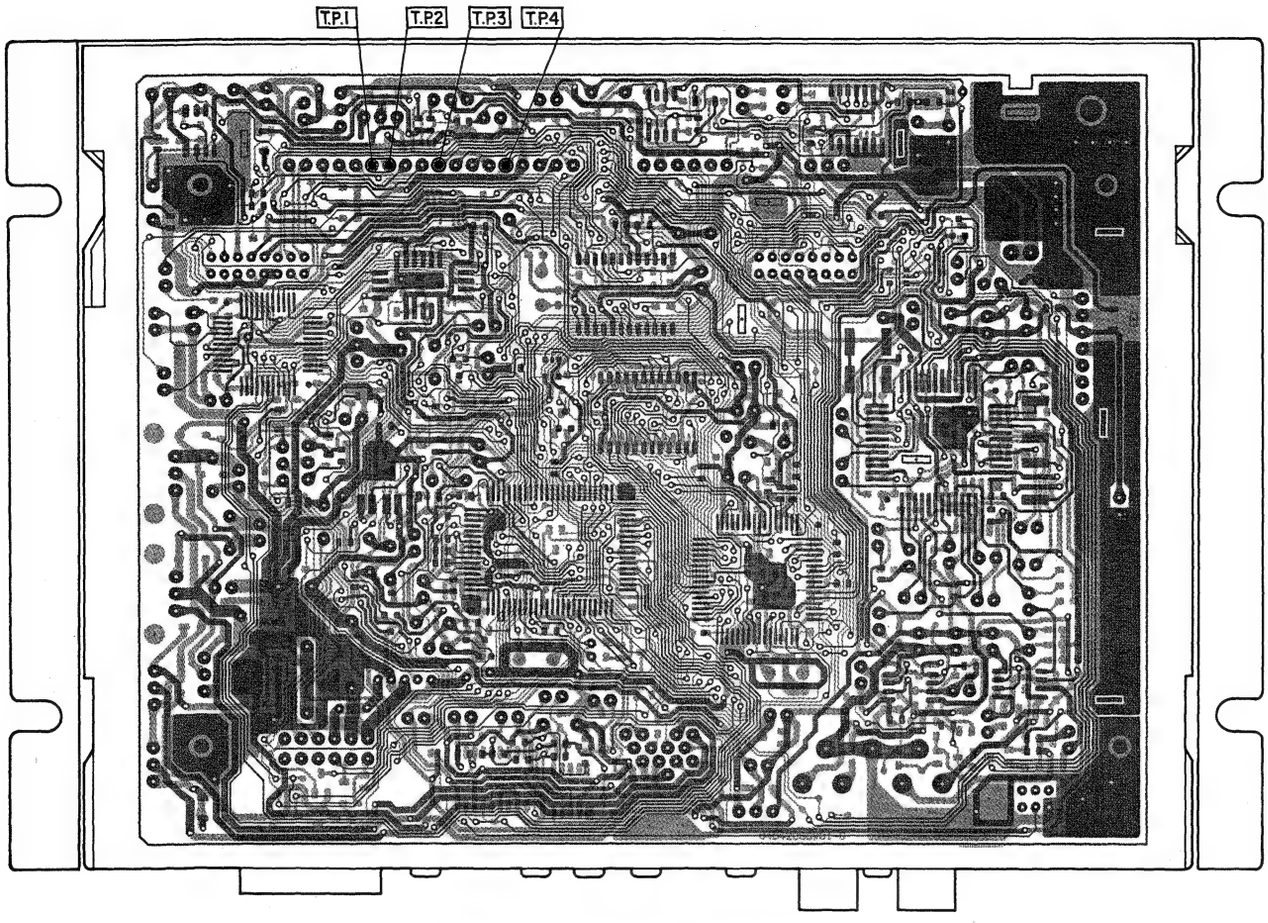
(3) Control Settings

Power Switch	ON
Fader Control	Center Position
Balance Control	Center Position
Treble / Bass Control	Center Position
DYNAS TITLE Switch	ON
Others	OFF

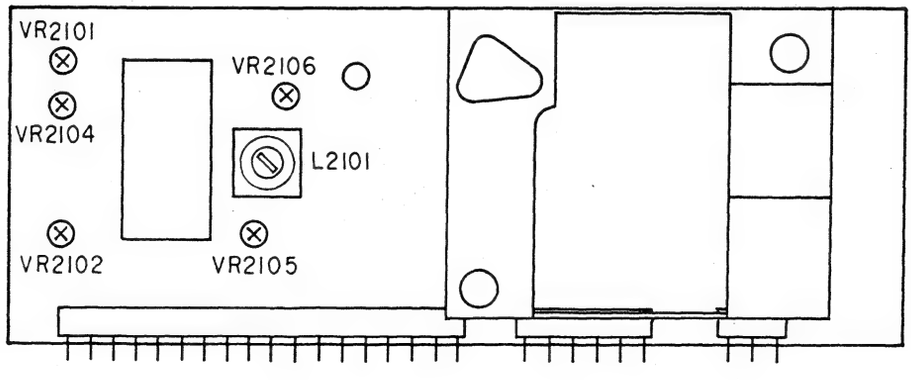
(4) Adjustment Procedures

Step	Description		Connection	Signal Generator	Dial Control	Test Point	Adjustment
1	Distortion Adjustment		Figure 8	98.1MHz, 72dB (Mod. OFF)	98.1MHz	Pre Output	Adjust L3005, as the distortion rate becomes minimum.
2	Output Level Adjustment		Figure 9	98.1MHz, 72dB (Mod. OFF)	98.1MHz	Pre Output	Adjust VR201 to 500mV±1dB.
3	Separation Adjustment (Lch)		Figure 9	98.1MHz, 72dB (Stereo 1kHz, Lch Only)	98.1MHz	Pre Output	Adjust VR3010 for Lch and Rch output level difference to be 0±5dB.
4	Separation Adjustment (Rch)		Figure 9	98.1MHz, 72dB (Stereo 1kHz, Rch Only)	98.1MHz	Pre Output	Proceed same adjustment under step 3.
5	Mute Adjustment	(1)	Figure 10	98.1MHz, 72dB (Mod. OFF)	98.1MHz	Pre Output	Adjust S401, 402 (LEVEL DOWN / UP SWITCH) to obtain 500mV output. This value is 0dB.
		(2)	Figure 10	98.1MHz, - 19dB (Mod. OFF)	98.1MHz	Pre Output	Adjust VR3001 to - 25±2dB output at SG level minimum.

Adjustment Locations

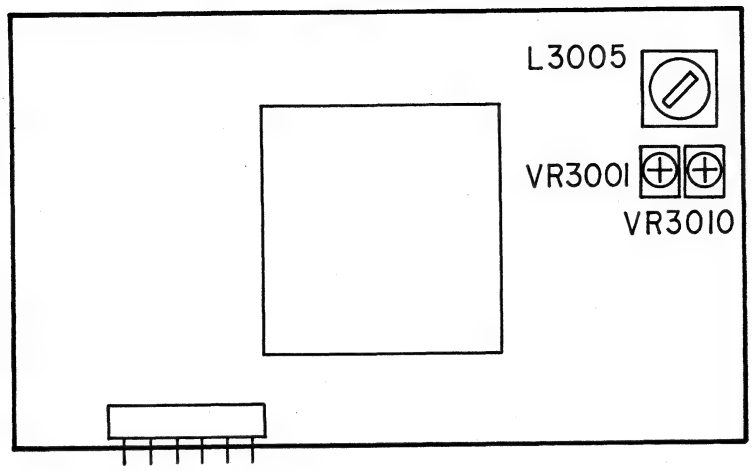


Main P.C. Board (Foil Side)



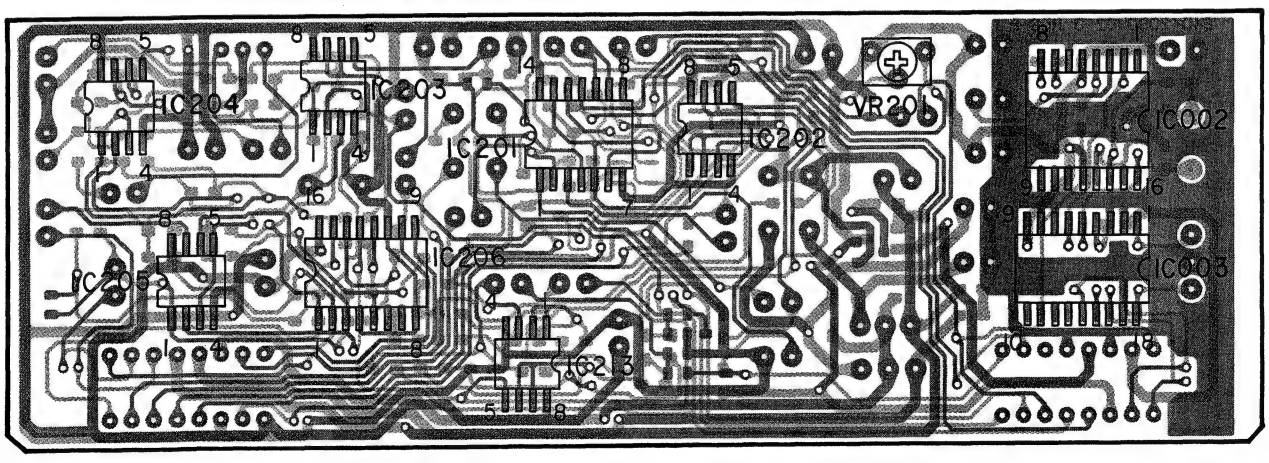
FM/MW/LW Tuner Unit (FE001)

Figure 11



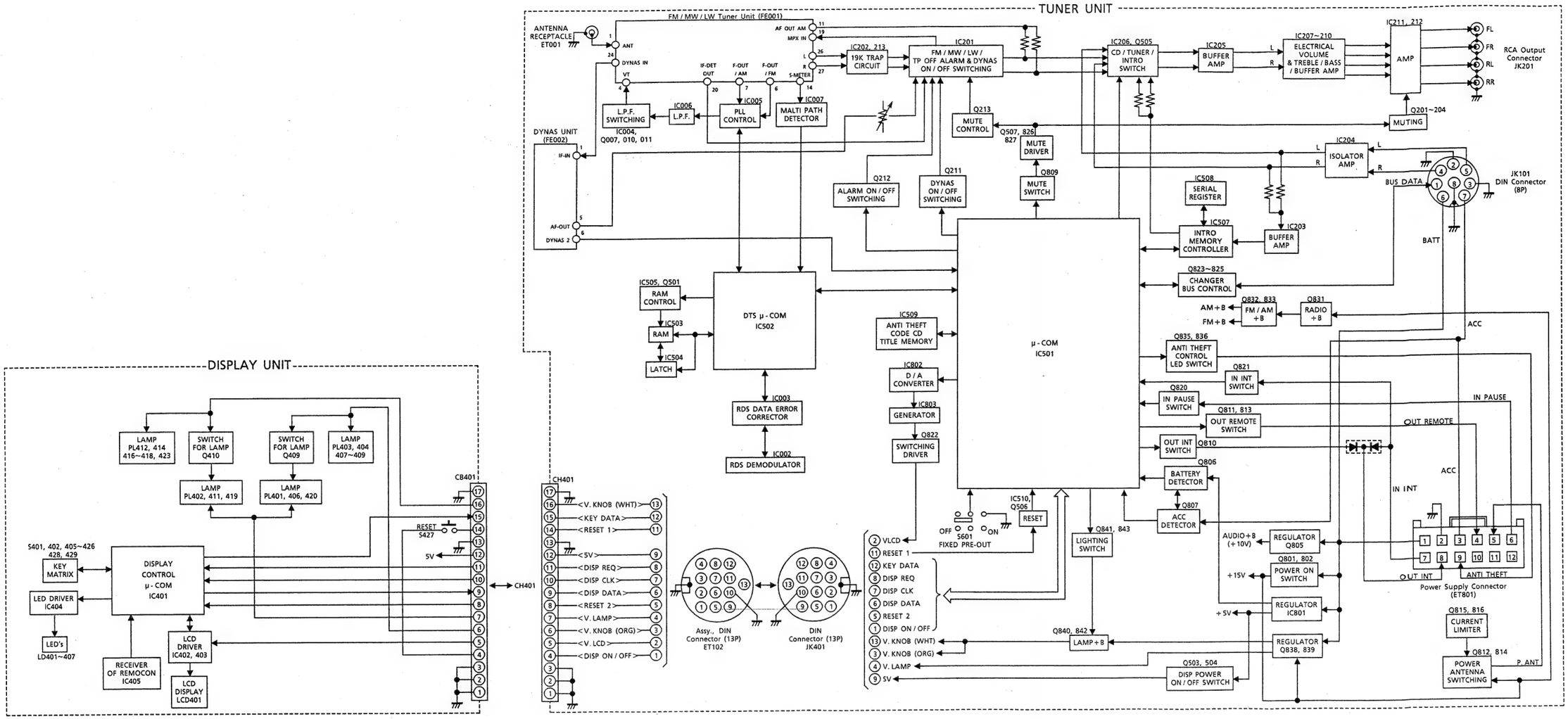
DYNAS Unit (FE002)

Figure 12

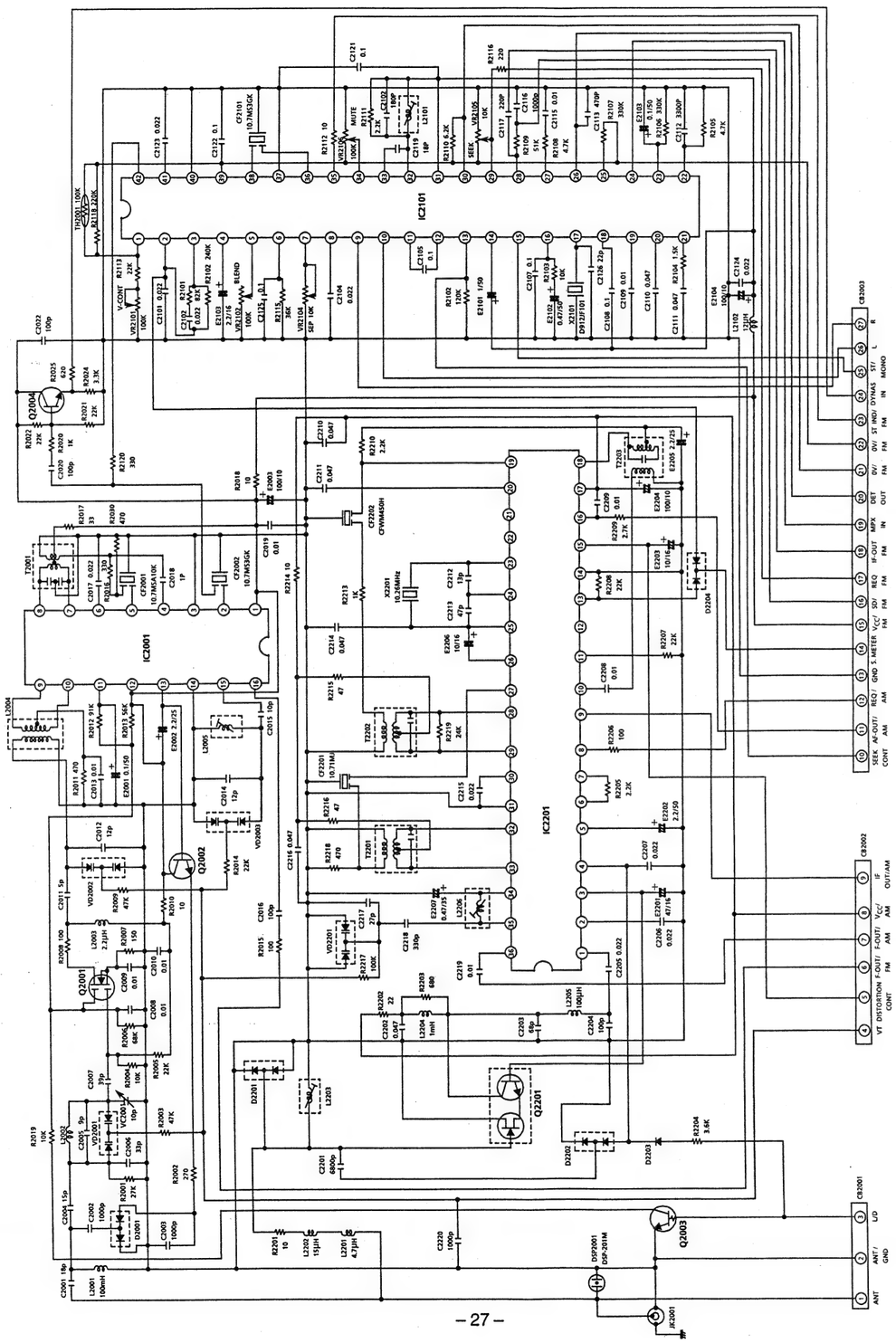


RDS P.C. Board (Component Side)

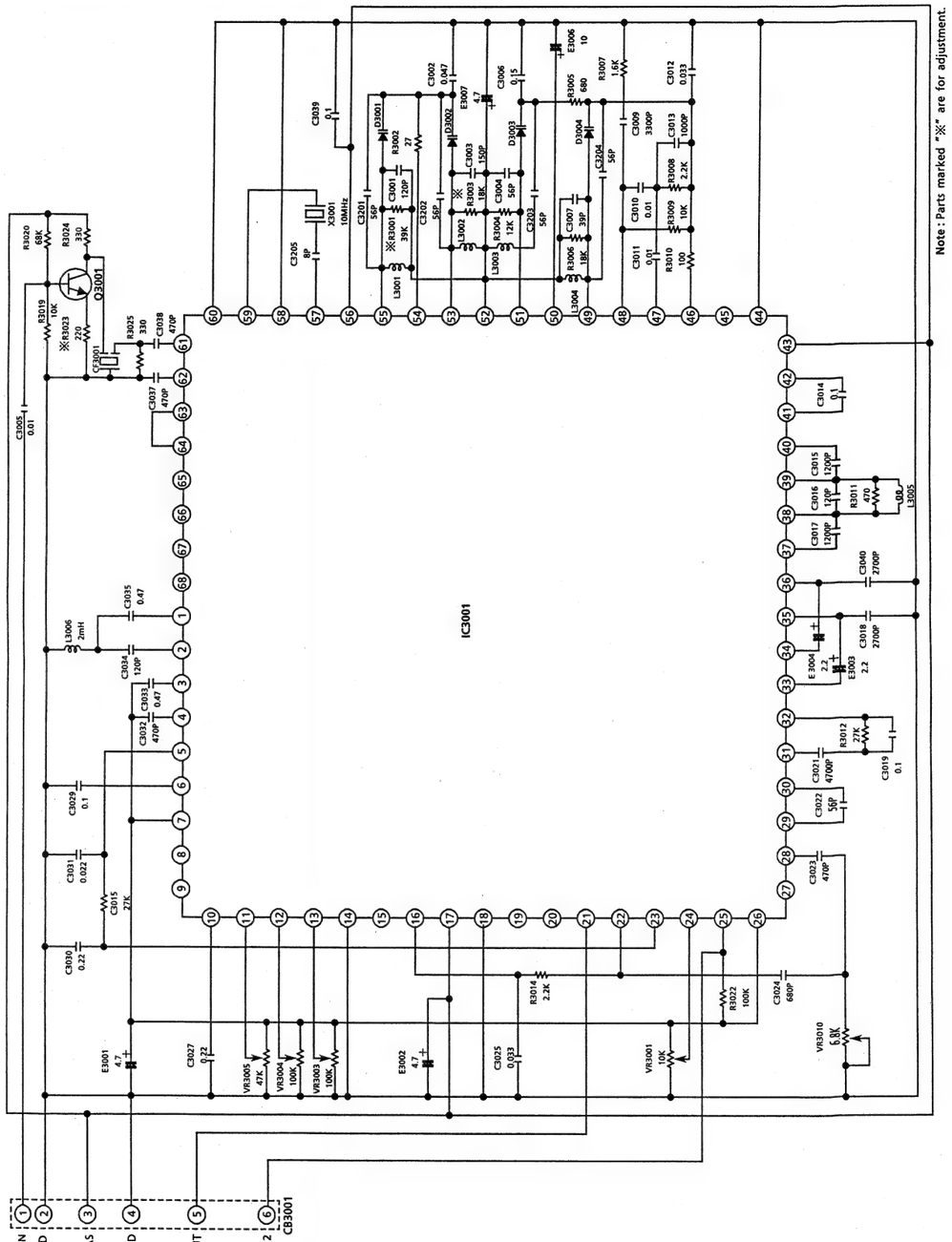
Block Diagram



Tuner Schematic Diagram

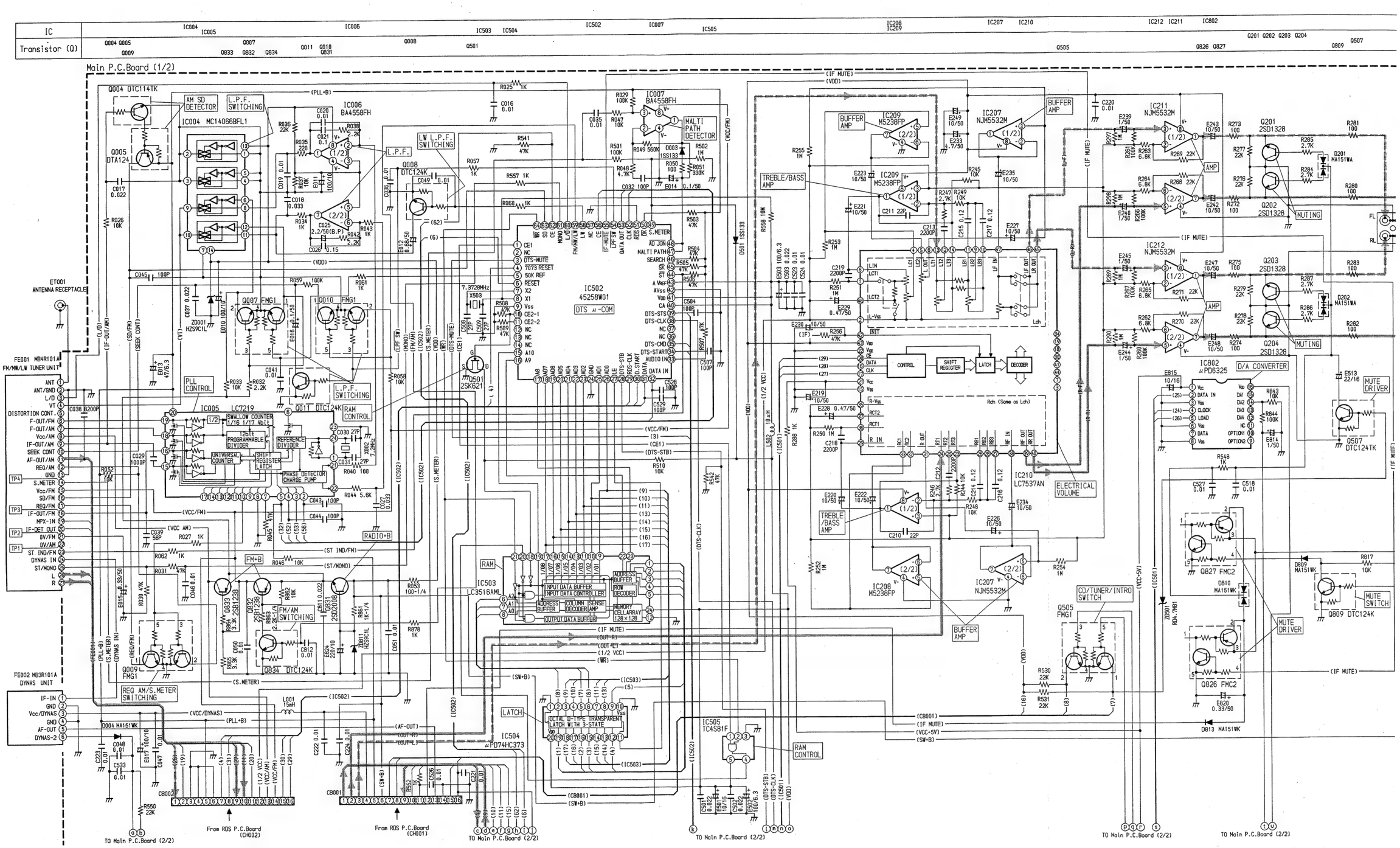


DYNAS Unit Schematic Diagram

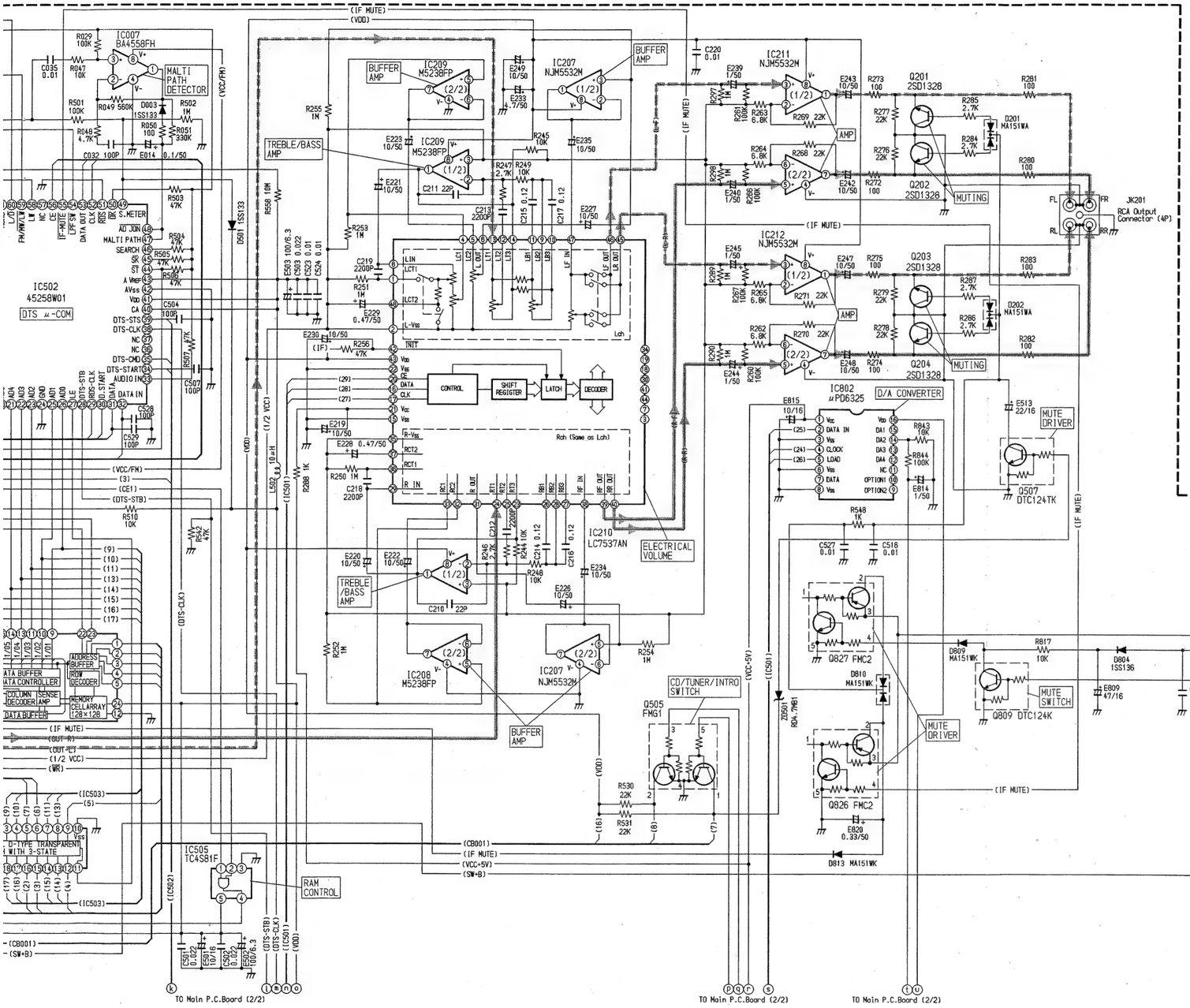


Note : Parts marked "※" are for adjustment.

Schematic Diagram (1/3) (Tuner Unit)



IC502 IC007 IC505 IC208 IC209 IC207 IC210 IC212 IC211 IC802 Q201 Q202 Q203 Q204 Q505 Q826 Q827 Q809 Q507



IC004

1	0V		8	6V / 9V	(API ON / OFF)
2	0V		9	6V	
3	0V		10	6V	
4	0V		11	6V	
5	0V		12	0V / 8V	(API ON / OFF)
6	9V / 0V	(API ON / OFF)	13	10V	
7	0V		14	10V	

IC006 IC007 IC207

1	2V	5V	5V
2	1V	5V	5V
3	3.2V	5V	5V
4	0V	0V	0V
5	3.2V	1V	4.2V
6	3.8V	1V	4.2V
7	6V	8.4V	4.5V
8	10V	9V	9.4V

IC210

1	4.3V	17	PS	33	5V	
2	4.8V	18	PS	34	0V	
3	0V	19	9.5V	35	5V	
4	4.9V	20	0V	36	4.5V	
5	4.9V	21	5V	37	5V	
6	4.9V	22	0V	38	5V	
7	0V	23	4.9V	39	5V	
8	4.9V	24	4.9V	40	5V	
9	4.9V	25	5V	41	0V	
10	4.9V	26	5V	42	9.2V	
11	4.9V	27	5V	43	9.2V	
12	4.9V	28	5V	44	0V	
13	4.9V	29	5V	45	4.8V	
14	4.9V	30	0V	46	4.9V	
15	0V	31	5V	47	4.9V	
16	0V	32	5V	48	4.9V	

IC005 IC503

1	PS	PS
2	5V	PS
3	0V	PS
4	0V	PS
5	5V	PS
6	0V	PS
7	0V	PS
8	0V	0V
9	0V	0V
10	5V	PS
11	0V	0V
12	0V	0V
13	0V	PS
14	0V	PS
15	0V	PS
16	0V	PS
17	0V	PS
18	0V	0V
19	PS	5V
20	5V	5V
21	1V	5V
22	3.6V	PS
23	0V	PS
24	PS	5V

IC502

1	5V		33	5V	
2	0V		34	PS	
3	5V / 0V	(DIS Mute OFF / ON)	35	0V	
4	5V / 0V	(7073 RESET OFF / ON)	36	0V	
5	0V / 5V	(API OFF / ON)	37	5V	
6	5V / 0V	(RESET OFF / ON)	38	PS	
7	PS		39	PS	
8	PS		40	5V	
9	0V		41	5V	
10	2V / 0V	(PWR ON / OFF)	42	0V	
11	PS		43	5V	
12	PS		44	0V / 5V	(ST ON / OFF)
13	PS		45	5V	
14	PS		46	5V	
15	5V		47	5V	
16	PS		48	5V	
17	PS		49	4V	(ANT Input 72dBμ)
18	PS		50	5V	
19	PS		51	0V	
20	PS		52	0V	
21	PS		53	0V	
22	PS		54	5V	
23	PS		55	0V / 5V	(IF - Mute OFF / ON)
24	0V		56	0V	
25	PS		57	0V	
26	0V		58	0V / 5V	(LW ON / OFF)
27	PS		59	5V / 0V	(FM / MW - LW)
28	0V		60	5V / 0V	(LO / DX)
29	PS	(RDS ON)	61	5V / 0V	(MONO ON / OFF)
30	5V		62	5V	
31	PS	(RDS ON)	63	5V	
32	5V		64	5V	

IC504

1	0V	11	PS	1	5V
2	0V	12	PS	2	5V
3	0V	13	PS	3	5V
4	PS	14	PS	4	0V
5	PS	15	PS	5	5V
6	PS	16	PS	6	5V
7	PS	17	PS	7	5V
8	PS	18	PS	8	9.4V
9	PS	19	PS		
10	0V	20	5V		

IC208, 209 211, 212

1	5V
2	5V
3	5V
4	0V
5	5V
6	5V
7	5V
8	9.4V

IC802

1	4.9V	9	0V		
2	PS	10	0V		
3	0V	11	0V		
4	PS	12	0V		
5	PS	13	0.5V		
6	0V	14	5V		
7	PS	15	0V		
8	0V	16	8.4V		

IC505

1	0V
2	5V
3	5V
4	5V
5	5V

	1	2	3	4	5	
Q007	8.1V / 0V	0V / 9.5V	8V / 0V	0V / 0V	0V / 2.2V	(API OFF / ON)
Q009	1.2V / 0V	2.5V / 0V	0V / 4.5V	0V	0V / 4.5V	(SEEK ON / OFF)
Q010	2V	0V	4.6V	0V	0V	
Q826	15V / 0V	0V / 11V	15V / 15V	0V / 5V	0V / 0V	(IF - MUTE OFF / ON)
Q827	14V / 0V	0V / 14V	14V / 14V	0V / 9V	0V / 0V	(IF - MUTE OFF / ON)

	E	C	B	
Q004	0V	5V	0V	
Q005	5V	0V	5V	
Q008	0V / 4.9V	0.5V / 0V	0V / 0V	(FM / LW)
Q011	4.6V	0V	0V	
Q201	0V / 0.5V	0V / 0V	0V / 0V	(MUTE OFF / ON)
Q202	0V / 0.5V	0V / 0V	0V / 0V	(MUTE OFF / ON)
Q203	0V / 0.5V	0V / 0V	0V / 0V	(MUTE OFF / ON)
Q204	0V / 0.5V	0V / 0V	0V / 0V	(MUTE OFF / ON)
Q507	0V / 3V	5.3V / 0V	0V / 0V	(INTRO OFF / ON)
Q809	5V / 0V	0V / 10V	0V / 0V	(MUTE OFF / ON)
Q831	9V	14V	8.5V	
Q832	8V / 8.5V	8.4V / 0.8V	8.5V / 8.5V	(FM / MW.LW)
Q833	8V / 8.5V	8.5V / 0V	8.5V / 8.5V	(FM / MW.LW)
Q834	4.7V / 0V	0V / 8.5V	0V / 0V	(FM / MW.LW)

	G	D	S	
Q501	5V / 0V	0V / 5V	0V	(IGN ON / OFF)

Q505

1	9.2V / 0V	(INTRO ON / OFF)
2	0V / 9.2V	(CD / RADIO)
3	2.6V / 0V	(INTRO ON / OFF)
4	0V	
5	2.6V / 0V	(INTRO ON / OFF)

<Voltage Measuring Conditions>

1. Power Supply : DC15V
2. Measuring Meter : Digital Multimeter
3. Measuring Point Reference : Between Ground
4. Measuring Conditions : No Signal Input
   FM : 98.1MHz
   MW : 999kHz
   LW : 216kHz

NOTES:

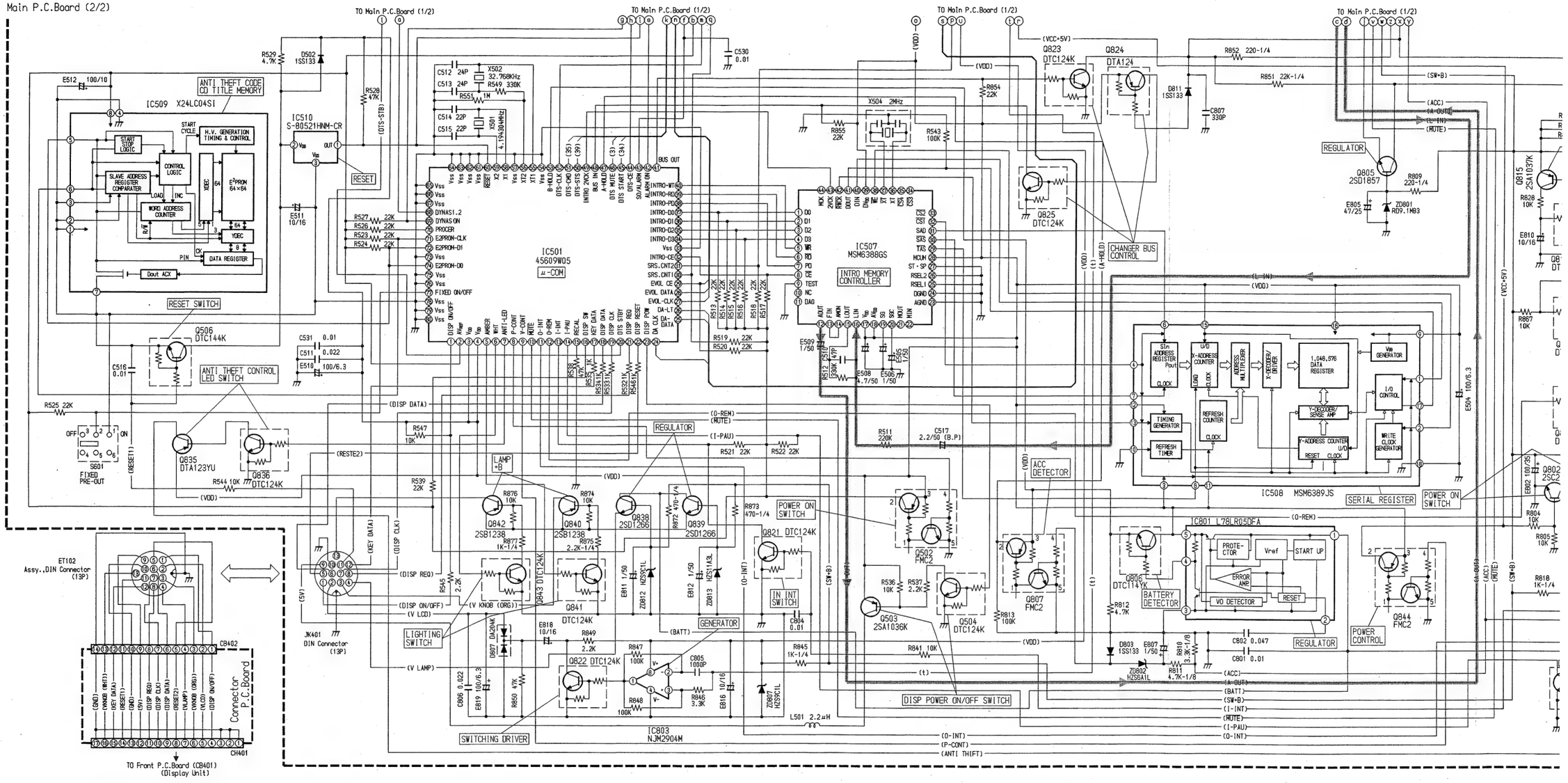
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

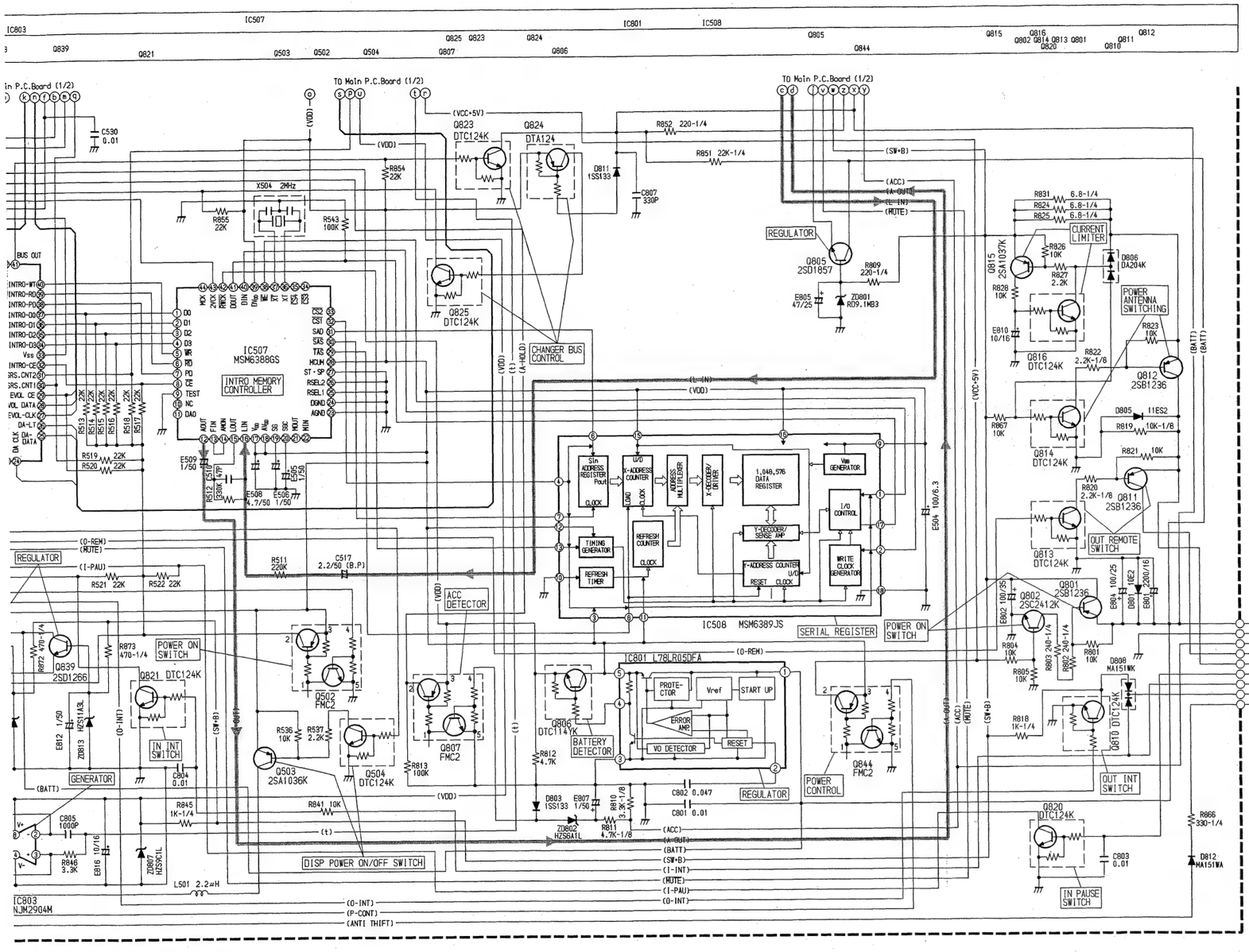
1310R 1310R

Schematic Diagram (2/3) (Tuner Unit)

IC	IC509	IC510	IC501	IC803	IC507	IC801	IC508
Transistor (Q)	Q835 Q506	Q836	Q842 Q843 Q840 Q822 Q841 Q838 Q839	Q821	Q503 Q502 Q504	Q825 Q823 Q807 Q824 Q806	Q805 Q844

Main P.C.Board (2/2)





IC501

1	2.7V / 2.6V	(PWR ON / OFF)	41	PS	
2	4.9V		42	PS / 0V	(ALARM ON / OFF)
3	5V		43	5V / 0V	(ALARM ON / OFF)
4	5V		44	5V	
5	0V / 5V	(GRN / ORG)	45	PS	
6	5V / 0V	(GRN / ORG)	46	5V / 0V	(DTS Mute OFF / ON)
7	0V / 5V	(IGN ON / OFF)	47	4.4V / 0V	(ACC ON / OFF)
8	5V / 0V	(IGN ON / OFF)	48	PS	
9	5V / 0V	(PWR ON / OFF)	49	PS	
10	0V / 5V	(Mute ON / OFF)	50	PS	
11	0V / 5V	(TA ON / OFF)	51	0V	
12	5V / 0V	(PWR ON / OFF)	52	PS	
13	0V / 5V	(IN INT ON / OFF)	53	4.4V	(BATT ON / OFF)
14	0V / 5V	(IN PAU ON / OFF)	54	0V	
15	0V		55	PS	
16	5V		56	PS	
17	PS		57	0V	
18	PS		58	PS	
19	PS		59	PS	
20	0V		60	5V / 0V	(RESET OFF / ON)
21	PS		61	0V	
22	5V		62	0V	
23	5V		63	0V	
24	PS		64	0V	
25	PS		65	0V	
26	PS		66	0V	
27	PS		67	0V	
28	PS		68	5V / 0V	(DYNAS 1 / 2)
29	PS		69	6V / 0V	(DYNAS ON / OFF)
30	0V / 2.6V	(RADIO / CD)	70	0V	
31	2.7V		71	5V	
32	5V		72	5V	
33	0V		73	0V	
34	5V		74	5V	
35	5V		75	0V	
36	5V		76	0V	
37	5V		77	0V	(FXED OFF / ON)
38	0V		78	0V	
39	5V		79	0V	
40	5V		80	0V	

	E	C	B	
Q503	4.2V / 5V	5V / 0V	5V / 5V	(NOSE ON / OFF)
Q504	5V / 0V	0V / 5V	0V / 0V	(NOSE ON / OFF)
Q506	0V / 1.6V	5V / 0V	0V / 0V	(RESET OFF / ON)
Q801	14V / 15V	15V / 0V	15V / 15V	(PWR ON / OFF)
Q802	0.7V / 0V	0V / 15V	0V / 0V	(PWR ON / OFF)
Q805	10V / 0V	15V / 15V	10V / 0V	(PWR ON / OFF)
Q806	4.8V	5V	4V	
Q810	5V / 0V	0V / 14V	0V / 0V	(MUTE OFF / ON)
Q811	14.5V	15V	14V	
Q812	14.5V	15V	14V	
Q813	5V	0V	0V	
Q814	10V / 0V	0V / 15V	0V / 0V	(P.ANT Short OFF / ON)
Q815	10V / 00V	15V / 0V	15V / 15V	(P.ANT Short OFF / ON)
Q816	0V / 10V	15V / 0V	0V / 0V	(P.ANT Short OFF / ON)
Q820	0V / 15V	5V / 0V	0V / 0V	(IN PAUSE OFF / ON)
Q821	0V / 11V	5V / 0V	0V / 0V	(IN INT OFF / ON)
Q822	PS	PS	0V	
Q823	PS	PS	0V	
Q824	PS	PS	5V	
Q825	PS	PS	0V	
Q835	PS / 5V	PS / 0V	5V / 5V	(IGN OFF / ON)
Q836	PS / 0V	PS / 5V	0V / 0V	(IGN OFF / ON)
Q838	9.5V	14V	9.2V	
Q839	10.4V	14V	10V	
Q840	9.6V / 9V	0V / 9.6V	8.6V / 9.6V	(GRN / ORG)
Q841	0V / 4.8V	9.6V / 0V	0V / 0V	(GRN / ORG)
Q842	9V / 9.6V	9.6V / 0V	9.6V / 9.6V	(GRN / ORG)
Q843	4.9V / 0V	0V / 9.6V	0V / 0V	(GRN / ORG)

IC508

1	5V	10	5V
2	5V	11	5V
3	0V	12	5V
4	0V	13	5V
5	5V	14	5V
6	5V	15	5V
7	0V	16	0V
8	5V	17	5V
9	5V	18	5V

IC509 IC803

1	0V	PS
2	0V	PS
3	0V	PS
4	0V	0V
5	5V	0V
6	5V	0V
7	0V	0V
8	5V	8.4V

	1	2	3	4	5	
Q502	0V / 5V	5V / 0V	5V / 5V	5V / 0V	0V / 0V	(IGN ON / OFF)
Q807	0V / 4V	4V / 0V	4V / 4V	8V / 0V	0V / 0V	(IGN ON / OFF)
Q844	0V / 4.8V	4.8V / 0V	4.8V / 4.8V	4.8V / 0V	0V / 0V	(PWR ON / OFF)

IC510

1	5V
2	5V
3	0V

IC801

1	14V
2	6V
3	0V
4	4.6V
5	5V

IC507

1	5V	12	2.6V	23	0V	34	5V
2	5V	13	2.6V	24	0V	35	5V
3	5V	14	2.6V	25	0V	36	PS
4	5V	15	2.6V	26	0V	37	PS
5	5V	16	2.6V	27	5V	38	5V
6	5V	17	5V	28	5V	39	5V
7	0V	18	5V	29	5V	40	5V
8	0V	19	2.6V	30	5V	41	0V
9	0V	20	2.6V	31	5V	42	5V
10	0V	21	1.6V	32	5V	43	PS
11	2.6V	22	0V	33	5V	44	0V

<Voltage Measuring Conditions>

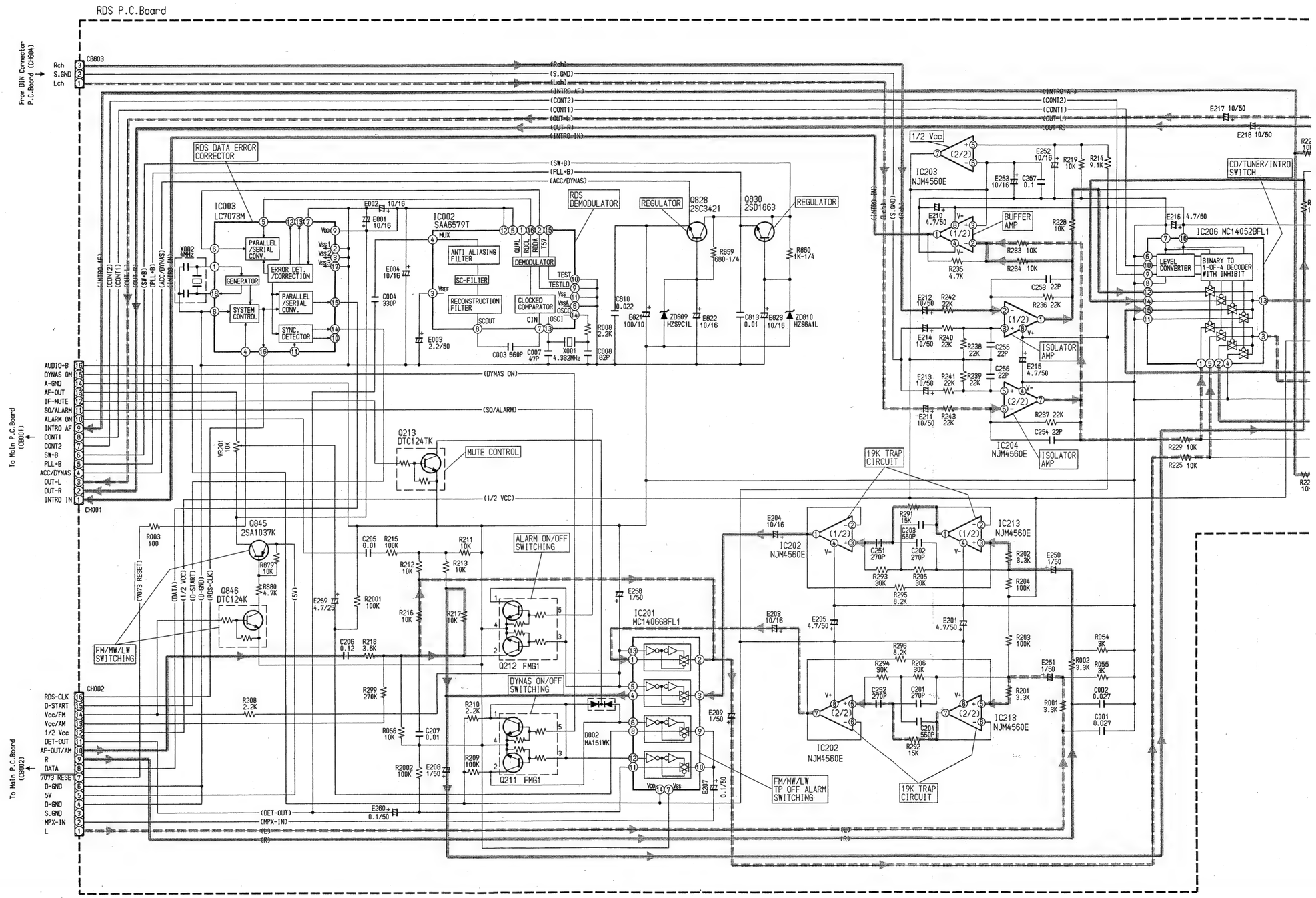
1. Power Supply : DC15V
2. Measuring Meter : Digital Multimeter
3. Measuring Point Reference : Between Ground
4. Measuring Conditions : No Signal Input
   FM : 98.1MHz
   MW : 999kHz
   LW : 216kHz

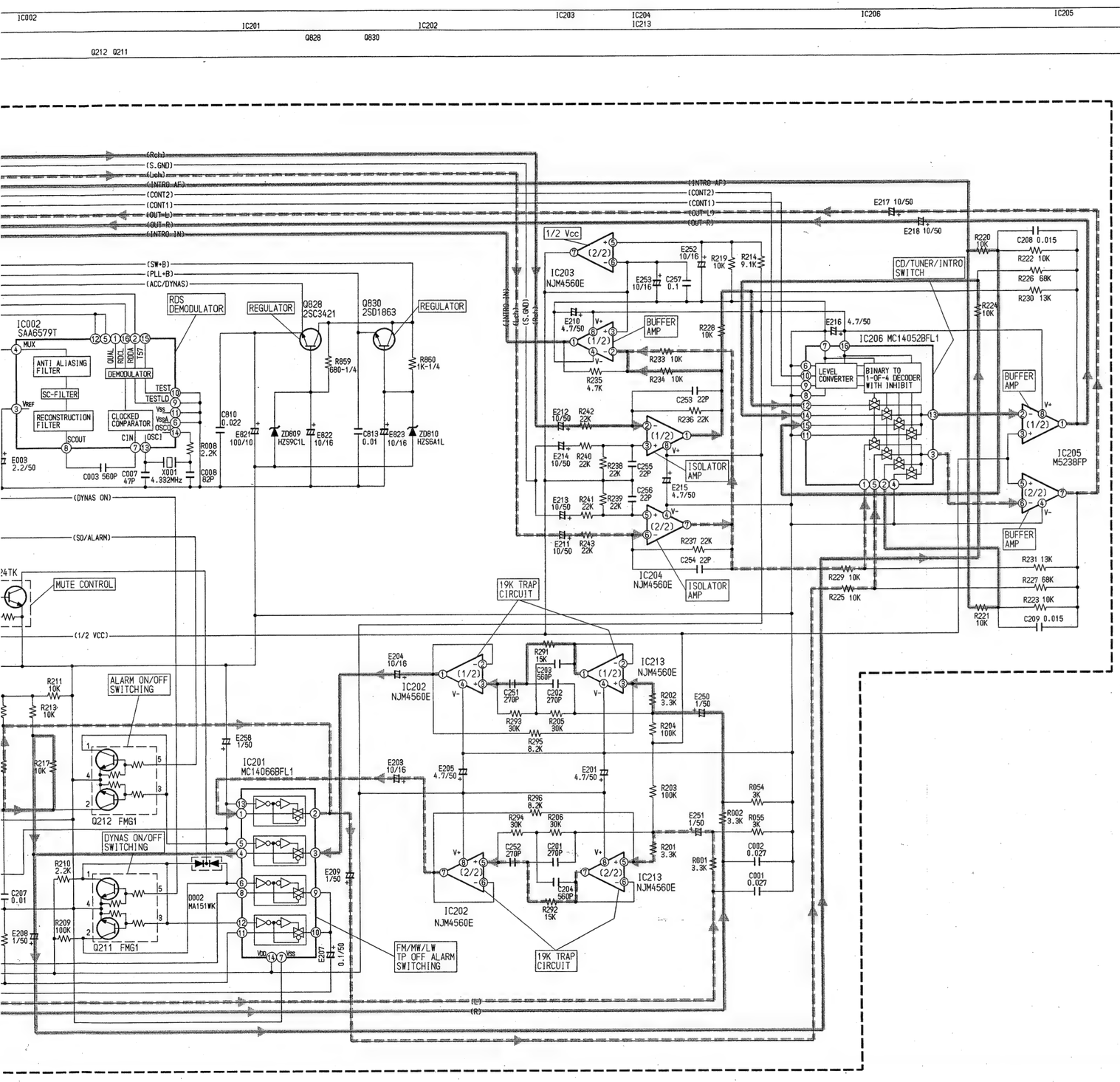
NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = $\frac{1}{1{,}000{,}000}$

Schematic Diagram (3/3) (Tuner Unit)

IC	IC003	IC002	IC201	IC202	IC203	IC204 IC213	IC206
Transistor (Q)	Q846 Q845	Q213	Q212 Q211	Q828 Q830			





IC002

1	PS	9	0V
2	PS	10	0V
3	1.2V	11	0V
4	1.2V	12	5V
5	5V	13	PS
6	0V	14	PS
7	1.2V	15	PS
8	1.2V	16	PS

IC003

1	PS	10	0V
2	0V	11	0V
3	0V	12	0V
4	5V	13	0V
5	PS	14	0V
6	PS	15	5V
7	0V	16	0V
8	0V	17	0V
9	5V	18	PS

	IC202	IC203	IC204
1	5V	5V	5V
2	5V	5V	5V
3	5V	5V	5V
4	0V	0V	0V
5	5V	5V	5V
6	5V	5V	5V
7	5V	5V	5V
8	9.4V	9.4V	9.4V

IC206

1	5V	9	0V	
2	5V	10	9.4V / 0V	(RADIO / CD)
3	5V	11	0V	
4	0V	12	5V	
5	5V	13	5V	
6	0V	14	5V	
7	0V	15	5V	
8	0V	16	9.4V	

IC201

1	0V		8	4V	
2	0V		9	4V	
3	0V		10	4V	
4	0V		11	4V	
5	8V / 0V	(ALARM OFF / ON)	12	9V / 0V	(ALARM SW OFF / ON)
6	0V / 9.5V	(DYNAS OFF / ON)	13	8V	
7	0V		14	9.4V	

	IC205	IC213
1	5V	4.9V
2	5V	4.9V
3	5V	4.9V
4	0V	0V
5	5V	4.9V
6	5V	4.9V
7	5V	4.9V
8	9.4V	9.2V

	1	2	3	4	5	
Q211	8.0V / 0V	0V / 8.5V	8.0V / 0V	0V / 0V	0V / 2.2V	(DYNAS OFF / ON)
Q212	8.5V / 0V	0V / 7.8V	8.5V / 0V	0V / 0V	0V / 5V	(ALARM OFF / ON)

	E	C	B	
Q213	0V / 5V	8V / 0V	0V / 0V	(IF MUTE OFF / ON)
Q828	9.2V	14V	8.4V	
Q830	5.3V	14V	4.8V	
Q845	5V / 5.7V	5.7V / 2V	5.7V / 5.7V	(FM / MW.LW)
Q846	8.4V / 0.6V	0V / 5.8V	0V / 0V	(FM / MW.LW)

<Voltage Measuring Conditions>

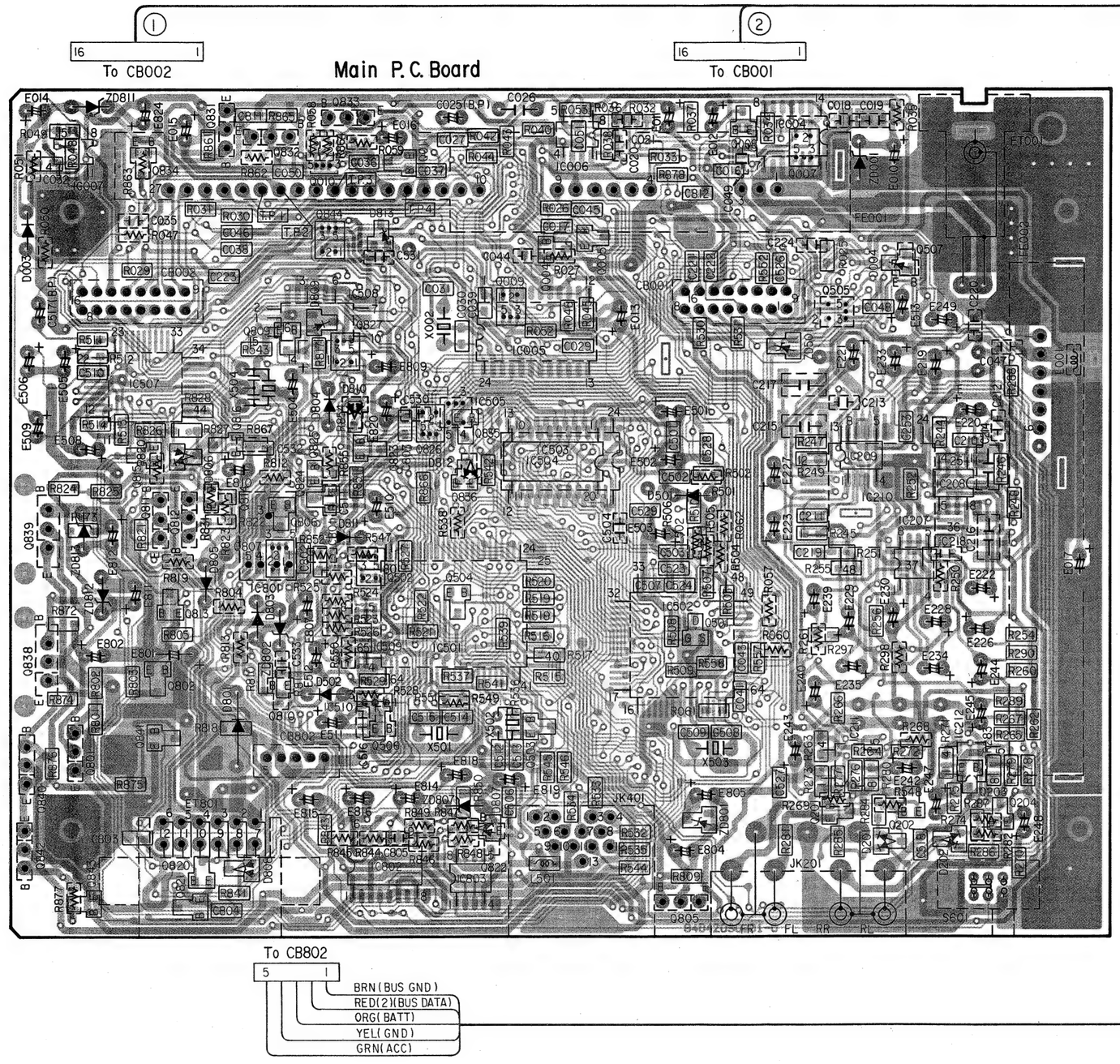
1. Power Supply : DC15V
2. Measuring Meter : Digital Multimeter
3. Measuring Point Reference : Between Ground
4. Measuring Conditions : No Signal Input
   FM : 98.1MHz
   MW : 999kHz
   LW : 216kHz

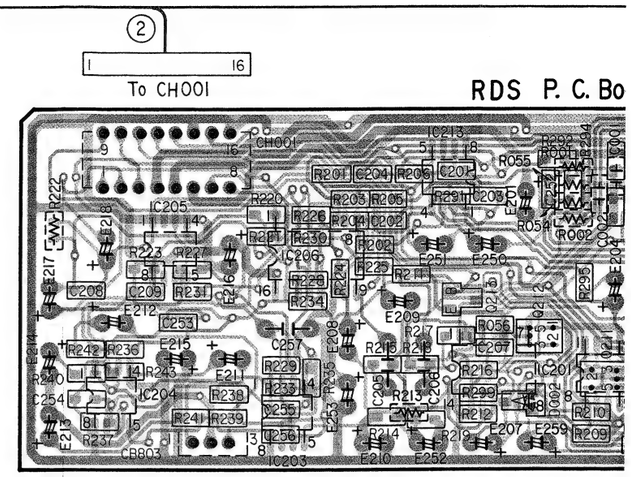
NOTES:

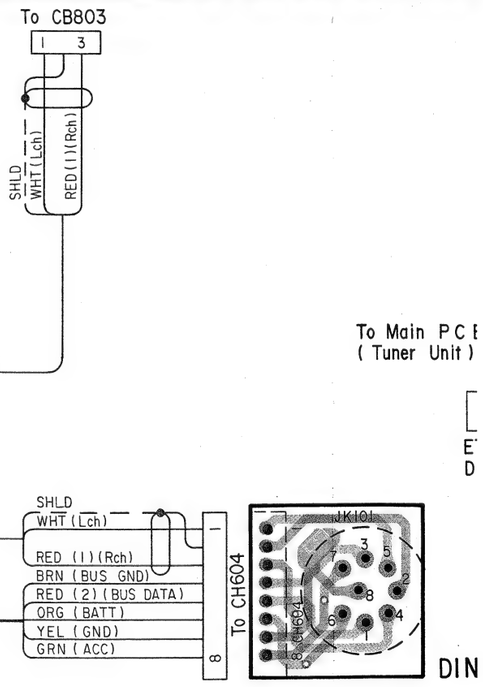
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

1310R 1310R

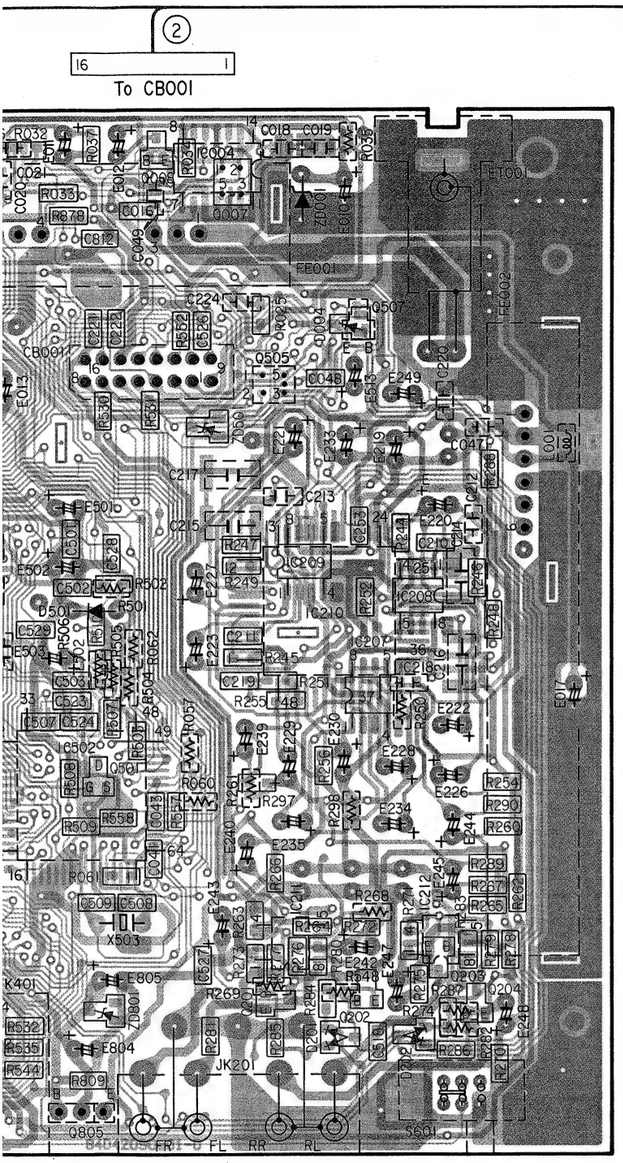
Parts Layout on P.C. Boards and Wiring Diagram (Tuner Unit)







agram (Tuner Unit)



Orange Color Pattern : Component Side Pattern
Blue Color Pattern : Foil Side Pattern

Electrical Parts List (Tuner Unit)

Resistor : Carbon resistors under 1 / 4 watts are not mentioned in the parts list, please confirm them by schematic diagram.

Capacitor : μF=microfarads, pF=picofarads

Abbreviations

RES.=	Resistor	CAP.=	Capacitor
C.F.=	Carbon Film	ELY.=	Electrolytic
M.F.=	Metal Film	CER.=	Ceramic
M.O.=	Metal Oxide Film	MYL.=	Mylar
M.P.=	Metal Plate	TAN.=	Tantalum
TR.=	Transistor	POLY.=	Polystyrol
TRANS.=	Transformer	PP.=	Polypropylene
CP.=	Chip	PLT.=	Polyethylene
		PF.=	Polyester Film

Symbol No.	Part No.	Description
Main P. C. Board		
IC's		
IC004	51T40941U03	MC14066BFL1
IC005	51T35504W02	LC7219
IC006	51T94121F11	BA4558FH
or	51T94121F21	XRA4558FH
IC007	51T94121F11	BA4558FH
or	51T94121F21	XRA4558FH
IC207	51T93335F01	NJM5532M
IC208	51T80136F04	M5238FP
IC209	51T80136F04	M5238FP
IC210	51T72016F02	LC7537AN
IC211	51T93335F01	NJM5532M
IC212	51T93335F01	NJM5532M
IC501	51T45609W05	45609W05
IC502	51T45258W01	45258W01
IC503	51T84723F02	LC3516AML
IC504	51T35086W02	μPD74HC373
IC505	51T93532F04	TC4S81F
IC507	51T45634W02	MSM6388GS
IC508	51T45635W03	MSM6389JS
IC509	51T45623W02	X24LC04SI
IC510	51T95014F13	S-8052HNM-CR
IC801	51T15268W03	L78LR05DFA
IC802	51T35479W02	μPD6325
IC803	51T93333F01	NJM2904M
Transistors		
Q004	48T62967F09	CP., DTC114TK
Q005	48T62966F03	CP., DTA124
Q007	48T73888F08	CP., FMG1
Q008	48T62967F03	CP., DTC124K
Q009	48T73888F08	CP., FMG1
Q010	48T73888F08	CP., FMG1
Q011	48T62967F03	CP., DTC124K
Q201	48T63788F01	CP., 2SD1328
Q202	48T63788F01	CP., 2SD1328
Q203	48T63788F01	CP., 2SD1328
Q204	48T63788F01	CP., 2SD1328
Q501	48T80674F01	FET, CP. 2SK621
Q502	48T73888F12	CP., FMC2
Q503	48T63419F01	CP., 2SA1036K
Q504	48T62967F03	CP., DTC124K
Q505	48T73888F08	CP., FMG1
Q506	48T62967F04	CP., DTC144K
Q507	48T62967F21	CP., DTC124TK
Q801	48T55058W01	2SB1236
Q802	48T63417F01	CP., 2SC2412K
Q805	48T55057W01	2SD1857
Q806	48T62967F06	CP., DTC114YK
Q807	48T73888F12	CP., FMC2
Q809	48T62967F03	CP., DTC124K
Q810	48T62967F03	CP., DTC124K
Q811	48T55058W01	2SB1236
Q812	48T55058W01	2SB1236
Q813	48T62967F03	CP., DTC124K
Q814	48T62967F03	CP., DTC124K
Q815	48T63420F01	CP., 2SA1037K
Q816	48T62967F03	CP., DTC124K
Q820	48T62967F03	CP., DTC124K
Q821	48T62967F03	CP., DTC124K
Q822	48T62967F03	CP., DTC124K
Q823	48T62967F03	CP., DTC124K
Q824	48T62966F03	CP., DTA124
Q825	48T62967F03	CP., DTC124K
Q826	48T73888F12	CP., FMC2
Q827	48T73888F12	CP., FMC2
Q831	48T15289W03	2SD2008
Q832	48T84234F04	2SB1238
Q833	48T84234F04	2SB1238
Q834	48T62967F03	CP., DTC124K
Q835	48T94606F67	CP., DTA123YU
Q836	48T62967F03	CP., DTC124K
Q838	48T56031F01	2SD1266
Q839	48T56031F01	2SD1266
Q840	48T84234F04	2SB1238
Q841	48T62967F03	CP., DTC124K
Q842	48T84234F04	2SB1238
Q843	48T62967F03	CP., DTC124K
Q844	48T73888F12	CP., FMC2

Symbol No.	Part No.	Description
Diodes		
D003	48T68828F11	1SS133
D004	48T52446F01	CP., MA151WK
D201	48T52445F01	CP., MA151WA
D202	48T52445F01	CP., MA151WA
D501	48T68828F11	1SS133
D502	48T68828F11	1SS133
D801	48T81044F01	10E2
D803	48T68828F11	1SS133
D804	48T70933F11	1SS136
D805	48T84052F11	11ES2
D806	48T64134F01	CP., DA204K
D807	48T64134F01	CP., DA204K
D808	48T52446F01	CP., MA151WK
D809	48T52446F01	CP., MA151WK
D810	48T52446F01	CP., MA151WK
D811	48T68828F11	1SS133
D812	48T52445F01	CP., MA151WA
D813	48T52446F01	CP., MA151WK
ZD001	48T25766W24	Zener, HZS9C1L
ZD501	48T62934F15	Zener, RD4.7MB1
ZD801	48T62934F38	Zener, RD9.1MB3
ZD802	48T25766W01	Zener, HZS6A1L
ZD807	48T25766W24	Zener, HZS9C1L
ZD811	48T25766W24	Zener, HZS9C1L
ZD812	48T25766W24	Zener, HZS9C1L
ZD813	48T25766W29	Zener, HZS11A3L
Coils		
L001	24T16403W29	Inductor., 15µH
L501	24T16403W19	Inductor., 2.2µH
L502	24T16403W27	Inductor., 10µH
Crystals		
X002	91T25773W43	7.2MHz
X501	91T25773W17	4.194304MHz
X502	91T15849W02	32.768KHz
X503	91T25773W44	7.3728MHz
X504	91T15285W06	CER., Lock 2MHz
Switch		
S601	40T25473W02	Slide, SSSF1 (FIXED PRE-OUT ON / OFF)

Symbol No.	Part No.	Description
Capacitors		
E010	23S61524F12	ELY., 100µF / 10V
E011	23T45365W02	ELY., 100µF / 10V
E012	23S61524F39	ELY., 0.68µF / 50V
E013	23S61524F07	ELY., 47µF / 6.3V
E014	23S61524F28	ELY., 0.1µF / 50V
E015	23S61524F30	ELY., 0.33µF / 50V
C016	08S65128F69	CP., 0.01µF
E016	23S61524F28	ELY., 0.1µF / 50V
C017	08S65128F78	CP., 0.022µF
E017	23S61524F12	ELY., 100µF / 10V
C018	08T15399W02	CP., 0.033µF
C019	08S65128F69	CP., 0.01µF
C020	08S65128F69	CP., 0.01µF
C021	08T55390W29	TF, 0.1µF
C025	23T82372F19	ELY., (B.P) 2.2µF / 50V
C026	08T55390W31	TF, 0.15µF
C027	08T15399W02	CP., 0.033µF
C029	08S65128F57	CP., 1000pF
C030	08S82122F23	CP., 27pF
C031	08S82122F23	CP., 27pF
C032	08S82122F37	CP., 100pF
C035	08S65128F69	CP., 0.01µF
C036	08S65128F69	CP., 0.01µF
C037	08S65128F78	CP., 0.022µF
C038	08S65128F68	CP., 8200pF
C039	08S65128F29	CP., 56pF
C041	08S65128F69	CP., 0.01µF
C043	08S65128F35	CP., 100pF
C044	08S65128F35	CP., 100pF
C045	08S82122F37	CP., 100pF
C046	08S65128F69	CP., 0.01µF
C047	08S65128F69	CP., 0.01µF
C048	08S65128F69	CP., 0.01µF
C049	08S65128F69	CP., 0.01µF
C050	08S65128F69	CP., 0.01µF
C051	08S65128F69	CP., 0.01µF
C210	08S82122F21	CP., 22pF
C211	08S82122F21	CP., 22pF
C212	08T55401W17	TF, 2200pF
C213	08T55401W17	TF, 2200pF
C214	08T15559W26	TF, 0.12µF
C215	08T15559W26	TF, 0.12µF
C216	08T15559W26	TF, 0.12µF
C217	08T15559W26	TF, 0.12µF
C218	08T55401W17	TF, 2200pF
C219	08T55401W17	TF, 2200pF
E219	23T45102W25	ELY., 10µF / 50µV
C220	08S65128F69	CP., 0.01µF
E220	23T45102W25	ELY., 10µF / 50V
C221	08S65128F69	CP., 0.01µF

Symbol No.	Part No.	Description
E221	23T45 102W25	ELY., 10μF / 50V
C222	08S65 128F69	CP., 0.01μF
E222	23T45 102W25	ELY., 10μF / 50V
C223	08S65 128F69	CP., 0.01μF
E223	23T45 102W25	ELY., 10μF / 50V
C224	08S65 128F69	CP., 0.01μF
E226	23T45 102W25	ELY., 10μF / 50V
E227	23T45 102W25	ELY., 10μF / 50V
E228	23T45 102W20	ELY., 0.47μF / 50V
E229	23T45 102W20	ELY., 0.47μF / 50V
E230	23T45 102W25	ELY., 10μF / 50V
E233	23T45 102W24	ELY., 4.7μF / 50V
E234	23T45 102W25	ELY., 10μF / 50V
E235	23T45 102W25	ELY., 10μF / 50V
E239	23T45 102W21	ELY., 1μF /50V
E240	23T45 102W21	ELY., 1μF /50V
E242	23T45 102W25	ELY., 10μF / 50V
E243	23T45 102W25	ELY., 10μF / 50V
E244	23T45 102W21	ELY., 1μF / 50V
E245	23T45 102W21	ELY., 1μF / 50V
E247	23T45 102W25	ELY., 10μF / 50V
E248	23T45 102W25	ELY., 10μF / 50V
E249	23T45 102W25	ELY., 10μF / 50V
C501	08S65 128F78	CP., 0.022μF
E501	23S61524F13	ELY., 10μF / 16V
C502	08S65 128F78	CP., 0.022μF
E502	23S61524F08	ELY., 100μF / 6.3V
C503	08S65 128F78	CP., 0.022μF
E503	23S61524F08	ELY., 100μF / 6.3V
C504	08S82122F37	CP., 100pF
E504	23S61524F08	ELY., 100μF / 6.3V
E505	23S61524F32	ELY., 1μF / 50V
E506	23S61524F32	ELY., 1μF / 50V
C507	08S82122F37	CP., 100pF
C508	08S82122F23	CP., 27pF
E508	23T55378W15	ELY., 4.7μF / 50V
C509	08S82122F23	CP., 27pF
E509	23T55378W12	ELY., 1μF / 50V
C510	08S82122F29	CP., 47pF
E510	23S61524F08	ELY., 100μF / 6.3V
C511	08S65128F78	CP., 0.022μF
E511	23S61524F13	ELY., 10μF / 16V
C512	08S82122F22	CP., 24pF
E512	23S61524F08	ELY., 100μF / 6.3V
C513	08S82122F22	CP., 24pF
E513	23S61524F14	ELY., 22μF / 16V
C514	08S82122F21	CP., 22pF
C515	08S82122F21	CP., 22pF
C516	08S65128F69	CP., 0.01μF
C517	23T82372F19	ELY., (B.P) 2.2μF / 50V
C518	08S65128F69	CP., 0.01μF
C523	08S65128F69	CP., 0.01μF

Symbol No.	Part No.	Description
C524	08S65128F69	CP., 0.01μF
C526	08S65128F69	CP., 0.01μF
C527	08S65128F69	CP., 0.01μF
C528	08S82122F37	CP., 100pF
C529	08S82122F37	CP., 100pF
C530	08S65128F69	CP., 0.01μF
C531	08S65128F69	CP., 0.01μF
C532	08S65128F69	CP., 0.01μF
C533	08S65128F69	CP., 0.01μF
C801	08S65128F69	CP., 0.01μF
E801	23T35505W02	ELY., 2200μF / 16V
C802	08T15399W03	CP., 0.047μF
E802	23T55378W07	ELY., 100μF / 35V
C803	08S65128F69	CP., 0.01μF
C804	08S65128F69	CP., 0.01μF
E804	23T45365W05	ELY., 100μF / 25V
C805	08S65128F57	CP., 1000pF
E805	23T45102W13	ELY., 47μF / 25V
C806	08S65128F78	CP., 0.022μF
C807	08S65128F47	CP., 330pF
E807	23S61524F32	ELY., 1μF / 50V
E809	23S61524F16	ELY., 47μF / 16V
E810	23S61524F13	ELY., 10μF / 16V
C811	08S65128F78	CP., 0.022μF
E811	23T55378W12	ELY., 1μF / 50V
C812	08S65128F69	CP., 0.01μF
E812	23T55378W12	ELY., 1μF / 50V
E814	23S61524F32	ELY., 1μF / 50V
E815	23S61524F13	ELY., 10μF / 16V
E816	23S61524F13	ELY., 10μF / 16V
E818	23S61524F13	ELY., 10μF / 16V
E819	23S61524F08	ELY., 100μF / 6.3V
E820	23S61524F30	ELY., 0.33μF / 50V
E824	23T45365W03	ELY., 220μF / 10V

Resistors (All resistors are chip 1/10W±5% unless otherwise noted.)

R025	06S64995F53	1K ohm
R026	06S64995F77	10K ohm
R027	06S64995F53	1K ohm
R029	06S64996F02	100K ohm
R030	06S64995F93	47K ohm
R031	06S64995F93	47K ohm
R032	06S64995F61	2.2K ohm
R033	06S64995F77	10K ohm
R034	06S64995F53	1K ohm
R035	06S64995F37	220 ohm
R036	06S64995F85	22K ohm
R037	06S64995F77	10K ohm
R038	06S64995F61	2.2K ohm

Symbol No.	Part No.	Description
R040	06S64995F29	100 ohm
R042	06S64995F61	2.2K ohm
R043	06S64995F53	1K ohm
R044	06S64995F71	5.6K ohm
R045	06S64995F93	47K ohm
R046	06S64995F77	10K ohm
R047	06S64995F77	10K ohm
R048	06S64995F69	4.7K ohm
R049	06S64996F20	560K ohm
R050	06S64995F29	100 ohm
R051	06S64996F14	330K ohm
R052	06S64995F77	10K ohm
R053	06T70072F29	100 ohm 1/4W
R057	06S64995F53	1K ohm
R058	06S64995F77	10K ohm
R059	06S64996F02	100K ohm
R060	06S64995F53	1K ohm
R061	06S64995F53	1K ohm
R062	06S64995F53	1K ohm
R244	06S64995F77	10K ohm
R245	06S64995F77	10K ohm
R246	06S64995F63	2.7K ohm
R247	06S64995F63	2.7K ohm
R248	06S64995F77	10K ohm
R249	06S64995F77	10K ohm
R250	06S64996F26	1M ohm
R251	06S64996F26	1M ohm
R252	06S64996F26	1M ohm
R253	06S64996F26	1M ohm
R254	06S64996F26	1M ohm
R255	06S64996F26	1M ohm
R256	06S64995F93	47K ohm
R260	06S64996F02	100K ohm
R261	06S64996F02	100K ohm
R262	06S64995F73	6.8K ohm
R263	06S64995F73	6.8K ohm
R264	06S64995F73	6.8K ohm
R265	06S64995F73	6.8K ohm
R266	06S64996F02	100K ohm
R267	06S64996F02	100K ohm
R268	06S64995F85	22K ohm
R269	06S64995F85	22K ohm
R270	06S64995F85	22K ohm
R271	06S64995F85	22K ohm
R272	06S64995F29	100 ohm
R273	06S64995F29	100 ohm
R274	06S64995F29	100 ohm
R275	06S64995F29	100 ohm
R276	06S64995F85	22K ohm
R277	06S64995F85	22K ohm
R278	06S64995F85	22K ohm
R279	06S64995F85	22K ohm

Symbol No.	Part No.	Description
R280	06S64995F29	100 ohm
R281	06S64995F29	100 ohm
R282	06S64995F29	100 ohm
R283	06S64995F29	100 ohm
R284	06S64995F63	2.7K ohm
R285	06S64995F63	2.7K ohm
R286	06S64995F63	2.7K ohm
R287	06S64995F63	2.7K ohm
R288	06S64995F53	1K ohm
R289	06S64996F26	1M ohm
R290	06S64996F26	1M ohm
R297	06S64996F26	1M ohm
R298	06S64996F26	1M ohm
R501	06S64996F02	100K ohm
R502	06S64996F26	1M ohm
R503	06S64995F93	47K ohm
R504	06S64995F93	47K ohm
R505	06S64995F93	47K ohm
R506	06S64995F93	47K ohm
R507	06S64995F93	47K ohm
R508	06S64995F93	47K ohm
R509	06S64995F93	47K ohm
R510	06S64995F77	10K ohm
R511	06S64996F10	220K ohm
R512	06S64996F14	330K ohm
R513	06S64995F85	22K ohm
R514	06S64995F85	22K ohm
R515	06S64995F85	22K ohm
R516	06S64995F85	22K ohm
R517	06S64995F85	22K ohm
R518	06S64995F85	22K ohm
R519	06S64995F85	22K ohm
R520	06S64995F85	22K ohm
R521	06S64995F85	22K ohm
R522	06S64995F85	22K ohm
R523	06S64995F85	22K ohm
R524	06S64995F85	22K ohm
R525	06S64995F85	22K ohm
R526	06S64995F85	22K ohm
R527	06S64995F85	22K ohm
R528	06S64995F93	47K ohm
R529	06S64995F69	4.7K ohm
R530	06S64995F85	22K ohm
R531	06S64995F85	22K ohm
R532	06S64995F53	1K ohm
R533	06S64995F53	1K ohm
R534	06S64995F53	1K ohm
R535	06S64995F53	1K ohm
R536	06S64995F77	10K ohm
R537	06S53330F61	2.2K ohm 1/8W
R538	06S64995F93	47K ohm
R539	06S64995F85	22K ohm

Symbol No.	Part No.	Description
R541	06S64995F93	47K ohm
R542	06S64995F93	47K ohm
R543	06S64996F02	100K ohm
R544	06S64995F77	10K ohm
R545	06S64995F61	2.2K ohm
R546	06S64995F53	1K ohm
R547	06S64995F77	10K ohm
R548	06S64995F53	1K ohm
R549	06S64996F14	330K ohm
R550	06S64995F85	22K ohm
R551	06S64996F26	1M ohm
R552	06S64995F53	1K ohm
R557	06S64995F53	1K ohm
R558	06S64996F38	10M ohm
R801	06S64995F77	10K ohm
R802	06T70072F38	240 ohm 1/4W
R803	06T70072F38	240 ohm 1/4W
R804	06S64995F77	10K ohm
R805	06S64995F77	10K ohm
R809	06T70072F37	220 ohm 1/4W
R810	06S53330F65	3.3K ohm 1/8W
R811	06S53330F69	4.7K ohm 1/8W
R812	06S64995F69	4.7K ohm
R813	06S64996F02	100K ohm
R817	06S64995F77	10K ohm
R818	06T70072F53	1K ohm 1/4W
R819	06S53330F77	10K ohm 1/8W
R820	06S53330F61	2.2K ohm 1/8W
R821	06S64995F77	10K ohm
R822	06S53330F61	2.2K ohm 1/8W
R823	06S64995F77	10K ohm
R824	06T70072F03	6.8 ohm 1/4W
R825	06T70072F03	6.8 ohm 1/4W
R826	06S64995F77	10K ohm
R827	06S53330F61	2.2K ohm 1/8W
R828	06S64995F77	10K ohm
R831	06T70072F03	6.8 ohm 1/4W
R841	06S64995F77	10K ohm
R843	06S64995F77	10K ohm
R844	06S64996F02	100K ohm
R845	06T70072F53	1K ohm 1/4W
R846	06S64995F65	3.3K ohm
R847	06S64996F02	100K ohm
R848	06S64996F02	100K ohm
R849	06S64995F61	2.2K ohm
R850	06S64995F93	47K ohm
R851	06S53330F85	22K ohm 1/8W
R852	06T70072F37	220 ohm 1/4W
R854	06S64995F85	22K ohm
R855	06S64995F85	22K ohm
R861	06T70072F53	1K ohm 1/4W
R862	06S64995F77	10K ohm

Symbol No.	Part No.	Description
R863	06T70072F61	2.2K ohm 1/4W
R864	06S64995F65	3.3K ohm
R865	06S64995F65	3.3K ohm
R866	06T70072F41	330 ohm 1/4W
R867	06S64995F77	10K ohm
R872	06T70072F45	470 ohm 1/4W
R873	06T70072F45	470 ohm 1/4W
R874	06S64995F77	10K ohm
R875	06T70072F61	2.2K ohm 1/4W
R876	06S64995F77	10K ohm
R877	06T70072F53	1K ohm 1/4W
R878	06S64995F53	1K ohm

RDS P. C. Board

IC's

IC002	51T55054W02	SAA6579T
IC003	51T35503W02	LC7073M
IC201	51T40941U03	MC14066BFL1
IC202	51T93338F01	NJM4560E
IC203	51T93338F01	NJM4560E
IC204	51T93338F01	NJM4560E
IC205	51T80136F04	M5238FP
IC206	51T15630W03	MC14052BFL1
IC213	51T93338F01	NJM4560E

Transistors

Q211	48T73888F08	CP., FMG1
Q212	48T73888F08	CP., FMG1
Q213	48T62967F21	CP., DTC124TK
Q828	48T69176F02	2SC3421
Q830	48T83617F04	2SD1863
Q845	48T63420F01	CP., 2SA1037K
Q846	48T62967F03	CP., DTC124K

Diodes

D002	48T52446F01	CP., MA151WK
ZD809	48T25766W24	Zener, HZS9C1L
ZD810	48T25766W01	Zener, HZS6A1L

Symbol No.	Part No.	Description
Crystals		
X001	91T45118W18	4.332MHz
X002	91T15848W01	CER., Lock 4MHz
Capacitors		
C001	08S65128F79	CP., 0.027µF
E001	23S61524F13	ELY., 10µF / 16V
C002	08S65128F79	CP., 0.027µF
E002	23S61524F13	ELY., 10µF / 16V
C003	08S65128F53	CP., 560pF
E003	23S61524F33	ELY., 2.2µF / 50V
C004	08S65128F47	CP., 330pF
E004	23S61524F13	ELY., 10µF / 16V
C007	08S65128F27	CP., 47pF
C008	08S65128F33	CP., 82pF
C201	08S82122F47	CP., 270pF
E201	23S61524F35	ELY., 4.7µF / 50V
C202	08S82122F47	CP., 270pF
C203	08S65128F53	CP., 560pF
E203	23S61524F13	ELY., 10µF / 16V
C204	08S65128F53	CP., 560pF
E204	23S61524F13	ELY., 10µF / 16V
C205	08T55390W17	PF., 0.01µF
E205	23S61524F35	ELY., 4.7µF / 50V
C206	08T55390W30	TF, 0.12µF
C207	08S65128F69	CP., 0.01µF
E207	23S61524F28	ELY., 0.1µF / 50V
C208	08S65128F71	CP., 0.015µF
E208	23S61524F32	ELY., 1µF / 50V
C209	08S65128F71	CP., 0.015µF
E209	23S61524F32	ELY., 1µF / 50V
E210	23S61524F35	ELY., 4.7µF / 50V
E211	23T45102W25	ELY., 10µF / 50V
E212	23T45102W25	ELY., 10µF / 50V
E213	23T45102W25	ELY., 10µF / 50V
E214	23T45102W25	ELY., 10µF / 50V
E215	23S61524F35	ELY., 4.7µF / 50V
E216	23S61524F35	ELY., 4.7µF / 50V
E217	23T45102W25	ELY., 10µF / 50V
E218	23T45102W25	ELY., 10µF / 50V
E250	23S61524F32	ELY., 1µF / 50V
C251	08S82122F47	CP., 270pF
E251	23S61524F32	ELY., 1µF / 50V
C252	08S82122F47	CP., 270pF
E252	23S61524F13	ELY., 10µF / 16V
C253	08S82122F21	CP., 22pF
E253	23S61524F13	ELY., 10µF / 16V
C254	08S82122F21	CP., 22pF

Symbol No.	Part No.	Description
C255	08S82122F21	CP., 22pF
C256	08S82122F21	CP., 22pF
C257	08T55390W29	TF, 0.1µF
E258	23S61524F32	ELY., 1µF / 50V
E259	23S61524F18	ELY., 4.7µF / 25V
E260	23S61524F28	ELY., 0.1µF / 50V
C810	08S65128F78	CP., 0.022µF
C813	08S65128F69	CP., 0.01µF
E821	23S61524F12	ELY., 100µF / 10V
E822	23S61524F13	ELY., 10µF / 16V
E823	23S61524F13	ELY., 10µF / 16V
Resistors (All resistors are chip 1/10W±5% unless otherwise noted.)		
R001	06S64995F65	3.3K ohm
R002	06S64995F65	3.3K ohm
R003	06S64995F29	100 ohm
R008	06S64995F61	2.2K ohm
R054	06S64995F64	3K ohm
R055	06S64995F64	3K ohm
R056	06S64995F77	10K ohm
R201	06S64995F65	3.3K ohm
R202	06S64995F65	3.3K ohm
R203	06S64996F02	100K ohm
R204	06S64996F02	100K ohm
R205	06S64995F88	30K ohm
R206	06S64995F88	30K ohm
R208	06S64995F61	2.2K ohm
R209	06S64996F02	100K ohm
R210	06S64995F61	2.2K ohm
R211	06S64995F77	10K ohm
R212	06S64995F77	10K ohm
R213	06S64995F77	10K ohm
R214	06S64995F76	9.1K ohm
R215	06S64996F02	100K ohm
R216	06S64995F77	10K ohm
R217	06S64995F77	10K ohm
R218	06S64995F66	3.6K ohm
R219	06S64995F77	10K ohm
R220	06S64995F77	10K ohm
R221	06S64995F77	10K ohm
R222	06S64995F77	10K ohm
R223	06S64995F77	10K ohm
R224	06S64995F77	10K ohm
R225	06S64995F77	10K ohm
R226	06S64995F97	68K ohm
R227	06S64995F97	68K ohm
R228	06S64995F77	10K ohm
R229	06S64995F77	10K ohm

Symbol No.	Part No.	Description
R230	06S64995F80	13K ohm
R231	06S64995F80	13K ohm
R233	06S64995F77	10K ohm
R234	06S64995F77	10K ohm
R235	06S64995F69	4.7K ohm
R236	06S64995F85	22K ohm
R237	06S64995F85	22K ohm
R238	06S64995F85	22K ohm
R239	06S64995F85	22K ohm
R240	06S64995F85	22K ohm
R241	06S64995F85	22K ohm
R242	06S64995F85	22K ohm
R243	06S64995F85	22K ohm
R291	06S64995F81	15K ohm
R292	06S64995F81	15K ohm
R293	06S64995F88	30K ohm
R294	06S64995F88	30K ohm
R295	06S64995F75	8.2K ohm
R296	06S64995F75	8.2K ohm
R299	06S64996F12	270K ohm
R859	06T70072F49	680 ohm 1/4W
R860	06T70072F53	1K ohm 1/4W
R879	06S64995F77	10K ohm
R880	06S64995F69	4.7K ohm
R2001	06S64996F02	100K ohm
R2002	06S64996F02	100K ohm
VR201	18T60065F13	Variable, 10K ohm

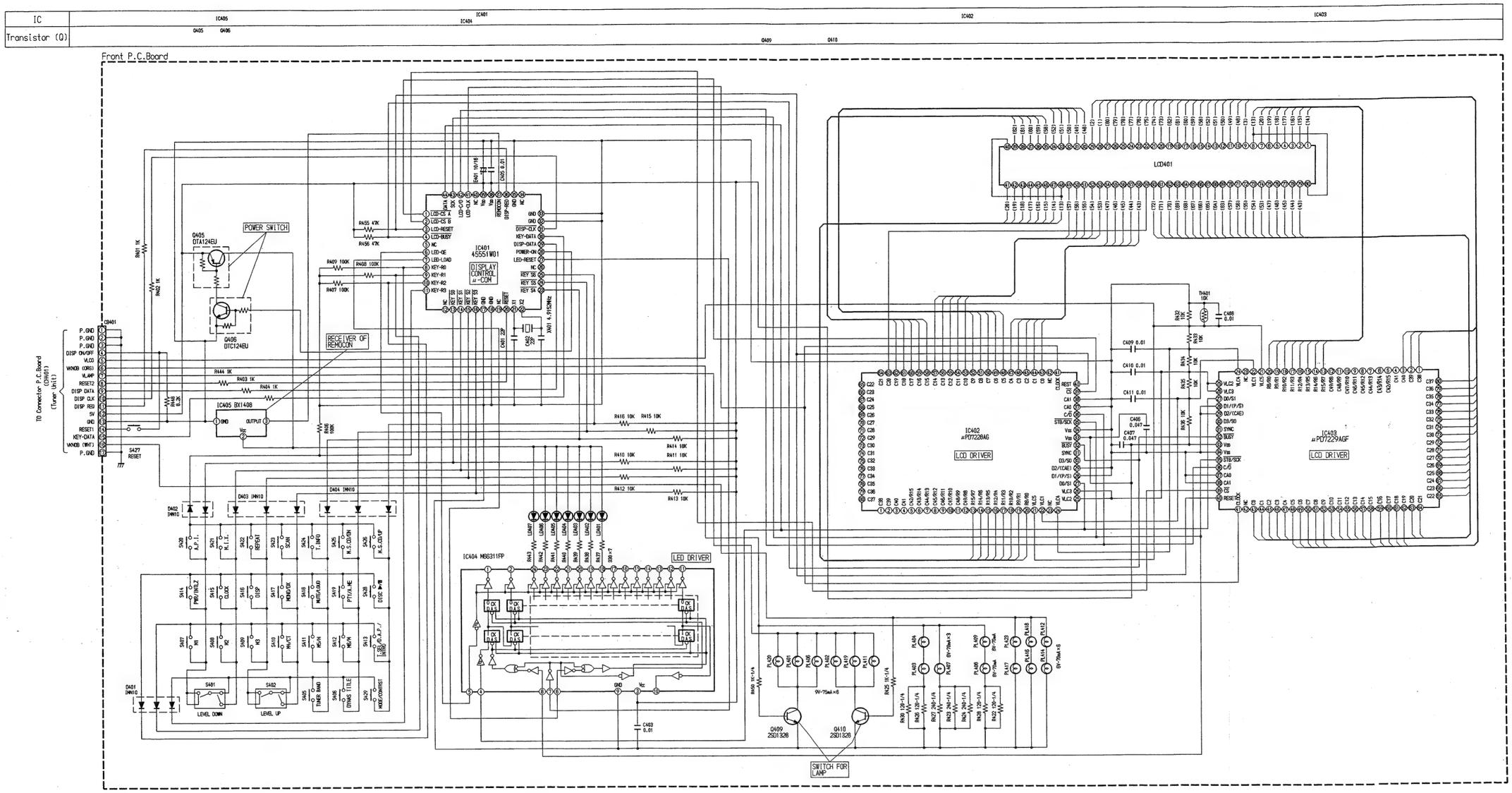
Miscellaneous

CH401	09T45337W01	17P Connector
ET001	09T45018W01	Antenna Receptacle
ET102	01T45631W01	Assy., DIN Connector (13P)
ET801	09T25842W12	Power Supply Connector
JK101	09T16162W05	DIN Connector (8P)
JK201	09T15454W03	RCA Output Connector (4P)
JK401	09T45702W01	DIN Connector (13P)

Symbol No.	Part No.	Description

MEMO

Schematic Diagram (Display Unit)



IC401

1	PS	16	PS	31	PS
2	PS	17	0.2V	32	0.2V
3	0.2V	18	0.2V	33	0.2V
4	PS	19	5V	34	0V
5	0.2V	20	5.1V	35	0.2V
6	0.2V	21	1.9V	36	PS
7	0.2V	22	SIG	37	PS
8	0.2V	23	PS	38	5.1V
9	0.2V	24	PS	39	5.1V
10	0.2V	25	PS	40	0.2V
11	0.2V	26	0.2V	41	SIG
12	0V	27	5.1V	42	PS
13	PS	28	5.1V	43	PS
14	PS	29	PS	44	PS
15	PS	30	PS		

IC402

1	PS	17	PS	33	5.1V	49	PS	65	PS
2	PS	18	PS	34	0.2V	50	PS	66	PS
3	PS	19	PS	35	PS	51	PS	67	PS
4	PS	20	PS	36	PS	52	PS	68	PS
5	PS	21	-0.6V	37	0.2V	53	PS	69	PS
6	PS	22	PS	38	0.2V	54	PS	70	PS
7	PS	23	0V	39	PS	55	PS	71	PS
8	PS	24	PS	40	0.2V	56	PS	72	PS
9	PS	25	PS	41	PS	57	PS	73	PS
10	PS	26	PS	42	0V	58	PS	74	PS
11	PS	27	PS	43	PS	59	PS	75	PS
12	PS	28	0.2V	44	PS	60	PS	76	PS
13	PS	29	0.2V	45	PS	61	PS	77	PS
14	PS	30	0V	46	PS	62	PS	78	PS
15	PS	31	0.2V	47	PS	63	PS	79	PS
16	PS	32	PS	48	PS	64	PS	80	PS

IC403

1	PS	17	PS	33	5.1V	49	PS	65	0V
2	PS	18	PS	34	0.2V	50	PS	66	PS
3	PS	19	PS	35	0.2V	51	PS	67	PS
4	PS	20	PS	36	PS	52	PS	68	PS
5	PS	21	-1.6V	37	0.2V	53	PS	69	PS
6	PS	22	PS	38	0.2V	54	PS	70	PS
7	PS	23	0V	39	PS	55	PS	71	PS
8	PS	24	0.1V	40	0.2V	56	PS	72	PS
9	PS	25	SIG	41	SIG	57	PS	73	PS
10	PS	26	SIG	42	0V	58	PS	74	PS
11	PS	27	SIG	43	PS	59	PS	75	PS
12	PS	28	0.2V	44	PS	60	PS	76	PS
13	PS	29	0V	45	PS	61	PS	77	PS
14	PS	30	0V	46	PS	62	PS	78	PS
15	PS	31	0.2V	47	PS	63	PS	79	PS
16	PS	32	PS	48	PS	64	PS	80	PS

IC404

1	0V	7	5.1V	13	0V	19	3.7V
2	0V	8	PS	14	0V	20	3.7V
3	5.1V	9	0.2V	15	0V	21	3.7V
4	PS	10	PS	16	0V	22	3.7V
5	0.2V	11	0V	17	0V	23	3.7V
6	0.2V	12	0V	18	3.7V	24	3.7V

IC405

1	0V
2	5V
3	PS

	E	C	B
Q405	5.1V	5V	0.6V
Q406	0.2V	0.2V	5.1V
Q409	0.2V	9V	0.2V
Q410	0.2V	0.2V	0.9V

<Voltage Measuring Conditions>

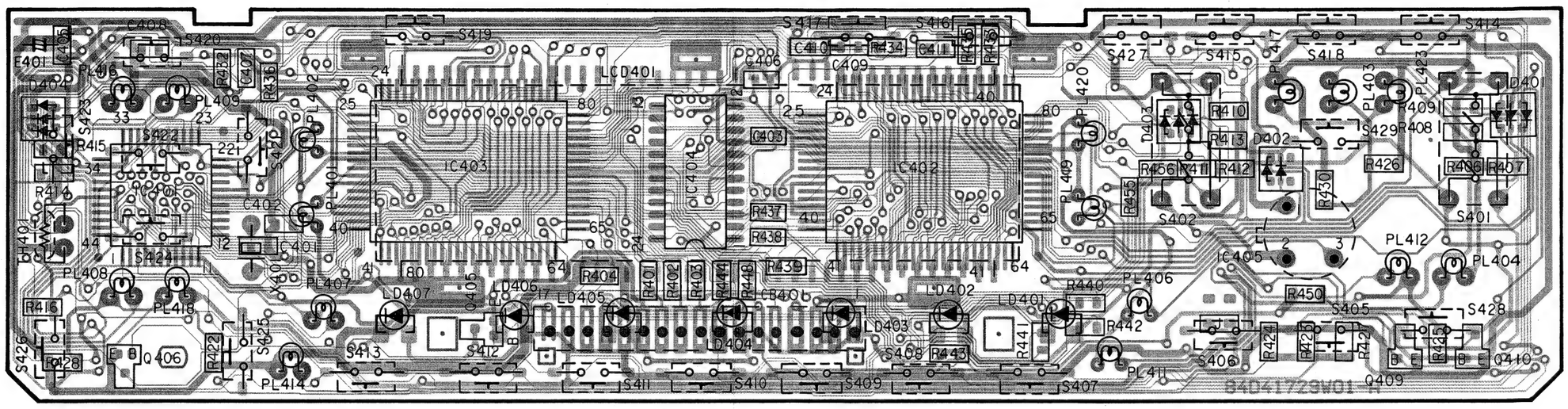
1. Power Supply : DC15V
2. Measuring Meter : Digital Multimeter
3. Measuring Point Reference : Between Ground
4. Measuring Conditions : No Signal Input
   FM : 98.1MHz
   MW : 999kHz
   LW : 216kHz

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in micro farads. P = $\frac{1}{1{,}000{,}000}$

Parts Layout on P.C. Boards and Wiring Diagram (Display Unit)

Front P.C.Board



To CB401

17 1

From Connector P. C. Board (CH401)
(Tuner Unit)

Orange Color Pattern : Component Side Pattern
Blue Color Pattern : Foil Side Pattern

Electrical Parts List (Display Unit)

Resistor : Carbon resistors under 1 / 4 watts are not mentioned in the parts list, please confirm them by schematic diagram.
Capacitor : μF=microfarads, pF=picofarads

Abbreviations

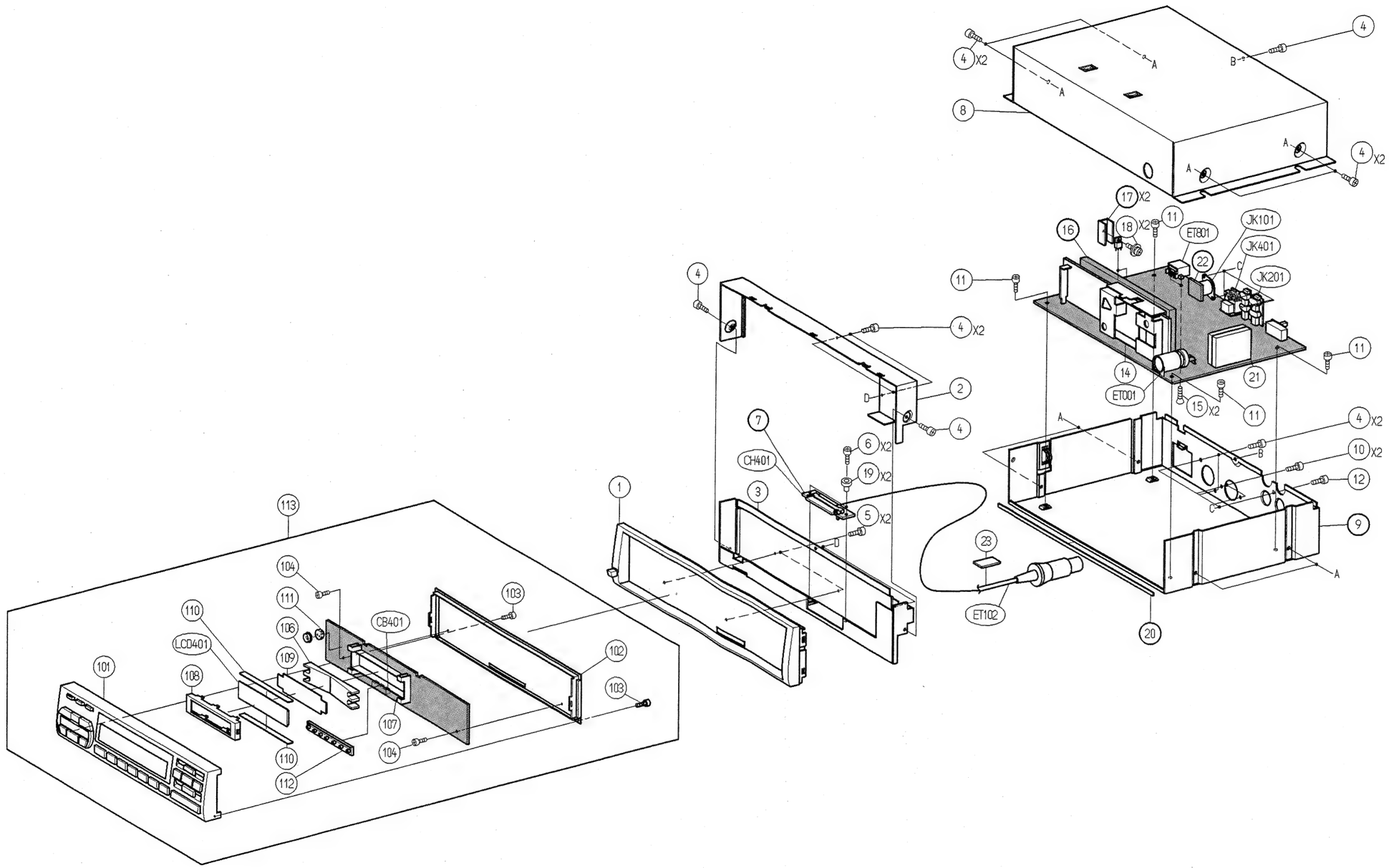
RES.=	Resistor	CAP.=	Capacitor
C.F.=	Carbon Film	ELY.=	Electrolytic
M.F.=	Metal Film	CER.=	Ceramic
M.O.=	Metal Oxide Film	MYL.=	Mylar
M.P.=	Metal Plate	TAN.=	Tantalum
TR.=	Transistor	POLY.=	Polystyrol
TRANS.=	Transformer	PP.=	Polypropylene
CP.=	Chip	PLT.=	Polyethylene
		PF.=	Polyester Film

Symbol No.	Part No.	Description
Front P. C. Board		
IC's		
IC401	51T45551W01	45551W01
IC402	51T25797W01	μPD7228AG
IC403	51T35265W01	μPD7229AGF
IC404	51T25966W01	M66311FP
IC405	51T83524F01	BX1408
Transistors		
Q405	48T94606F53	CP., DTA124EU
Q406	48T94606F03	CP., DTC124EU
Q409	48T63788F01	CP., 2SD1328
Q410	48T63788F01	CP., 2SD1328
Diodes		
D401	48T94471F01	CP., IMN10
D402	48T94471F01	CP., IMN10
D403	48T94471F01	CP., IMN10
D404	48T94471F01	CP., IMN10
LED's		
LD401	48T90476F02	CP., BR1102W (RED)
LD402	48T90476F02	CP., BR1102W (RED)
LD403	48T90476F02	CP., BR1102W (RED)
LD404	48T90476F02	CP., BR1102W (RED)
LD405	48T90476F02	CP., BR1102W (RED)
LD406	48T90476F02	CP., BR1102W (RED)
LD407	48T90476F02	CP., BR1102W (RED)
Switches		
S401	40T83612F01	Tact, SKHFAD (LEVEL DOWN)
S402	40T83612F01	Tact, SKHFAD (LEVLE UP)
S405	40T35140W22	Tact, SKQDAB (TUNER BAND)
S406	40T35140W22	Tact, SKQDAB (DYNAS TITLE)
S407	40T35140W22	Tact, SKQDAB (M1)
S408	40T35140W22	Tact, SKQDAB (M2)
S409	40T35140W22	Tact, SKQDAB (M3)
S410	40T35140W22	Tact, SKQDAB (M4 / CT)
S411	40T35140W22	Tact, SKQDAB (M5 / H)
S412	40T35140W22	Tact, SKQDAB (M6 / M)
S413	40T35140W22	Tact, SKQDAB (T. SEL / D.A.P. / INTRO)
S414	40T35140W22	Tact, SKQDAB (PWR / INTLZ)
S415	40T35140W22	Tact, SKQDAB (CLOCK)
S416	40T35140W22	Tact, SKQDAB (DISP)
S417	40T35140W22	Tact, SKQDAB (MONO · DX)
S418	40T35140W22	Tact, SKQDAB (MUTE / LOUD)
S419	40T35140W22	Tact, SKQDAB (PTY / A. ME)
S420	40T35140W22	Tact, SKQDAB (A.P.I.)
S421	40T35140W22	Tact, SKQDAB (M.I.X.)
S422	40T35140W22	Tact, SKQDAB (REPEAT)
S423	40T35140W22	Tact, SKQDAB (SCAN)
S424	40T35140W22	Tact, SKQDAB (T. INFO)
S425	40T35140W22	Tact, SKQDAB (M.S. CD / DN)
S426	40T35140W22	Tact, SKQDAB (M.S. CD / UP)
S427	40T35140W22	Tact, SKQDAB (RESET)
S428	40T35140W22	Tact, SKQDAB (DISC ▸ / ▸▸)
S429	40T35140W22	Tact, SKQDAB (MODE / CONTRST)

Symbol No.	Part No.	Description
Lamps		
PL401	65T45587W04	9V-75mA
PL402	65T45587W05	9V-75mA
PL403	65T45353W01	6V-70mA
PL404	65T45353W01	6V-70mA
PL406	65T45587W07	9V-75mA
PL407	65T45353W01	6V-70mA
PL408	65T45353W01	6V-70mA
PL409	65T45353W01	6V-70mA
PL411	65T45587W06	9V-75mA
PL412	65T45353W02	6V-70mA
PL414	65T45353W02	6V-70mA
PL416	65T45353W02	6V-70mA
PL417	65T45353W02	6V-70mA
PL418	65T45353W02	6V-70mA
PL419	65T45587W05	9V-75mA
PL420	65T45587W04	9V-75mA
PL423	65T45353W02	6V-70mA
Thermistor / Crystal		
TH401	48T93439F03	10K ohm
X401	91T25773W27	Crystal, 4.9152MHz
Capacitors		
C401	08S82122F21	CP., 22pF
E401	23T74180F03	CP. ELY., 10μF / 16V
C402	08S82122F21	CP., 22pF
C403	08S65128F69	CP., 0.01μF
C405	08S65128F69	CP., 0.01μF
C406	08S65128F74	CP., 0.047μF
C407	08S65128F74	CP., 0.047μF
C408	08S65128F69	CP., 0.01μF
C409	08S65128F69	CP., 0.01μF
C410	08S65128F69	CP., 0.01μF
C411	08S65128F69	CP., 0.01μF

Symbol No.	Part No.	Description
Resistors (All resistors are chip 1/10W±5% unless otherwise noted.)		
R401	06S64995F53	1K ohm
R402	06S64995F53	1K ohm
R403	06S64995F53	1K ohm
R404	06S64995F53	1K ohm
R406	06S64996F02	100K ohm
R407	06S64996F02	100K ohm
R408	06S64996F02	100K ohm
R409	06S64996F02	100K ohm
R410	06S64995F77	10K ohm
R411	06S64995F77	10K ohm
R412	06S64995F77	10K ohm
R413	06S64995F77	10K ohm
R414	06S64995F77	10K ohm
R415	06S64995F77	10K ohm
R416	06S64995F77	10K ohm
R422	06T70072F31	120 ohm 1/4W
R423	06T70072F38	240 ohm 1/4W
R424	06T70072F38	240 ohm 1/4W
R425	06T70072F53	1K ohm 1/4W
R426	06T70072F31	120 ohm 1/4W
R427	06T70072F38	240 ohm 1/4W
R428	06T70072F31	120 ohm 1/4W
R430	06T70072F31	120 ohm 1/4W
R432	06S64995F77	10K ohm
R433	06S64995F77	10K ohm
R434	06S64995F77	10K ohm
R435	06S64995F77	10K ohm
R436	06S64995F77	10K ohm
R437	06S64995F41	330 ohm
R438	06S64995F41	330 ohm
R439	06S64995F41	330 ohm
R440	06S64995F41	330 ohm
R441	06S64995F41	330 ohm
R442	06S64995F41	330 ohm
R443	06S64995F41	330 ohm
R444	06S64995F53	1K ohm
R448	06S64995F75	8.2K ohm
R450	06T70072F53	1K ohm 1/4W
R455	06S64995F93	47K ohm
R456	06S64995F93	47K ohm
Miscellaneous		
CB401	09T45338W01	17P Connector
LCD401	65T45618W01	LCD Display

Exploded View (Cabinet)



Cabinet Assembly Parts List

Notes : ● No parts number on parts list are not supplied.
● Parts marked * will need a long delivery time, or may be not supplied in some cases.

Symbol No.	Index	Part No.	Description
1	3-D	13T55033W01	Assy., Front Escutcheon
2	3-E	15B50036W01	Cover, Top
3	3-G	15C50027W01	Cover, Bottom
4		03S44205G34	Screw, Pan (M2.6×5)
5	4-E	03S70494F10	Screw, Pan (M2.6×10)
6	3-E	03S38013W13	Screw, Bind (M2.6×6)
8	2-E	15C50026W02	Cover, Top
10		03S44205G76	Screw, Pan (M2.6×8)
11		03S44205G48	Screw, Pan (M2.6×5)
12	3-G	03S68555F13	Screw, Pan (M3×10)
14	3-F	77B51061W01	FM / MW / LW Tuner, MB4R101A (FE001)
15	3-G	03S68555F22	Screw, Countersink (M3×8)
18	2-F	03D40121T06	Screw, W/Double Washer (M2.6×8)
19	3-E	46A50963W01	Stud, Connector
21	3-G	77B50045W01	DYNAS Unit, MB3R101A (FE002)
23	4-E	75S50638W01	Cushion, Rubber
101	4-A	13T55005W02	Assy., Nosepiece
102	4-D	13T55030W01	Nose, Bottom
103		03S68555F19	Screw, Pan (M2×12)
104		03S68555F34	Screw, Pan (M2×4.5)
106	4-B	61A50029W01	Lens, LCD
107	4-C	15B50030W01	Case, LCD
108	4-B	15B50031W01	Cover, LCD
109	4-B	26A50032W01	Sheet, LCD
110		75T35021W04	Rubber, Electric
111	4-B	43T55031W01	Spacer, Power
112	5-B	15T55032W01	Case, LED
*113	3-B	01V51400W29	Assy., Nose Unit

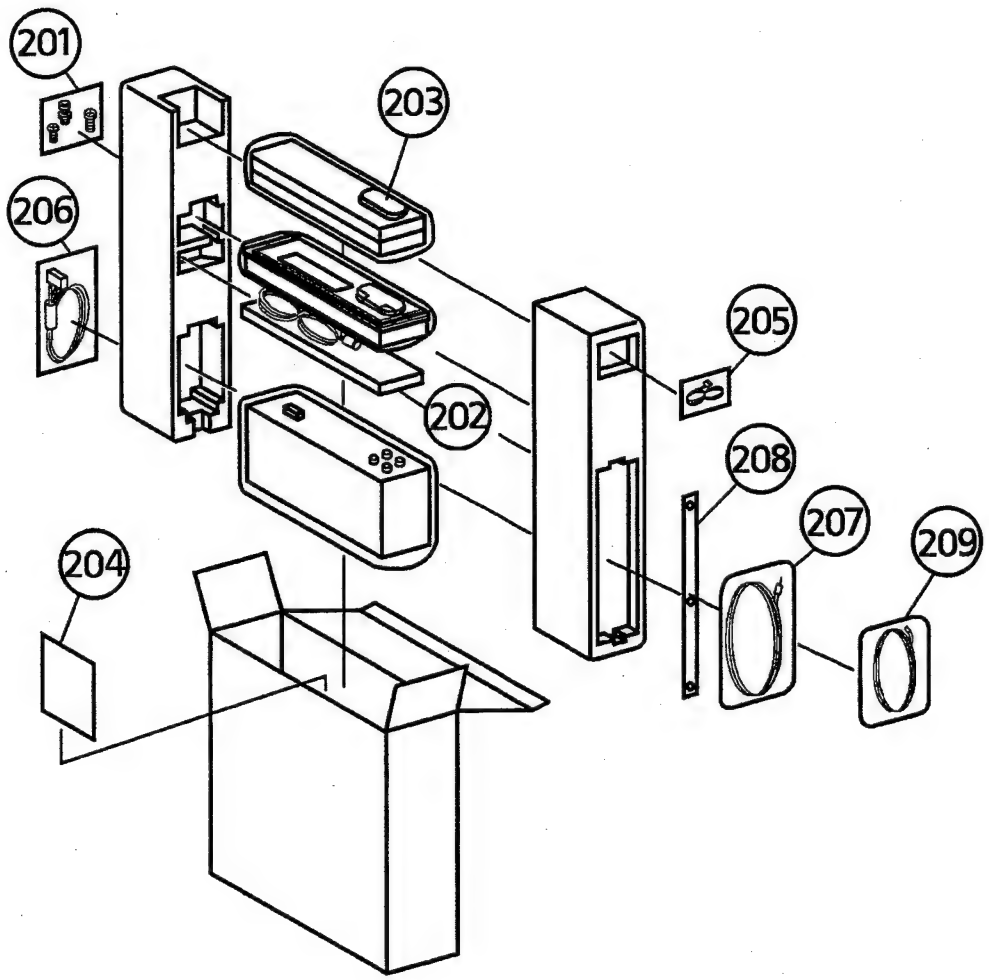
Symbol No.	Index	Part No.	Description

Packing Assembly Part List

Symbol No.	Part No.	Description
201	01V44300W06	Assy., Kit Installation
202	15C50202W01	Case, Inner
203	15D42040W01	Carrying, Case
204	68P40870W96	Owner's Manual
205	01T96095F08	Assy., Connector (4P)
206	01T25808W15	Assy., Output Connector
207	01T16240W01	Assy., Antenna Cable
208	07B64552F01	Bracket, Strap Receiver
209	48T71964F02	LED, Remote LN012292P (RED)

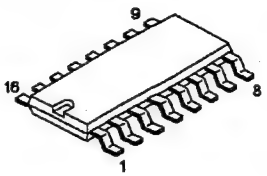
Symbol No.	Part No.	Description

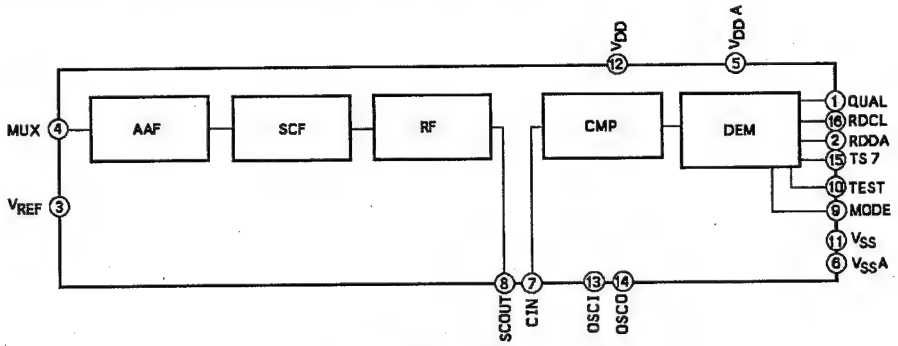
Packing Method View



Semi - Conductor Lead Identifications

SAA6579T : IC002





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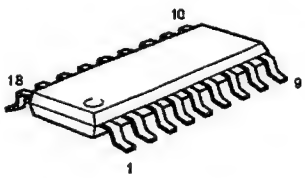
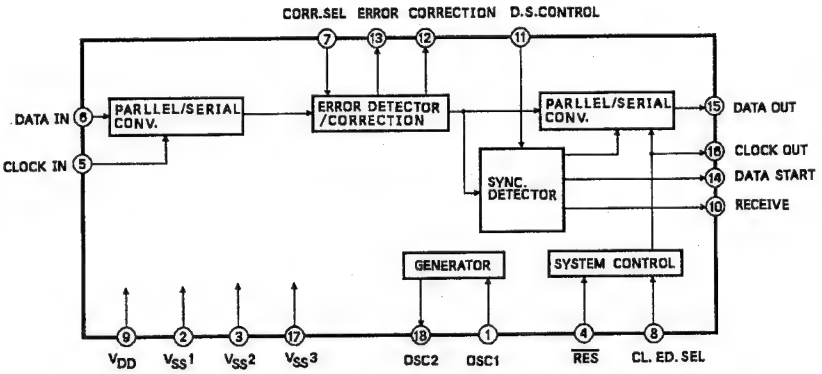
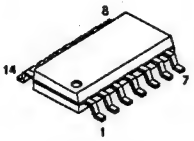
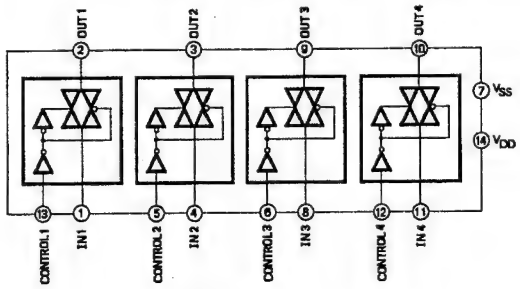


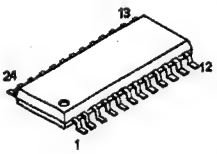


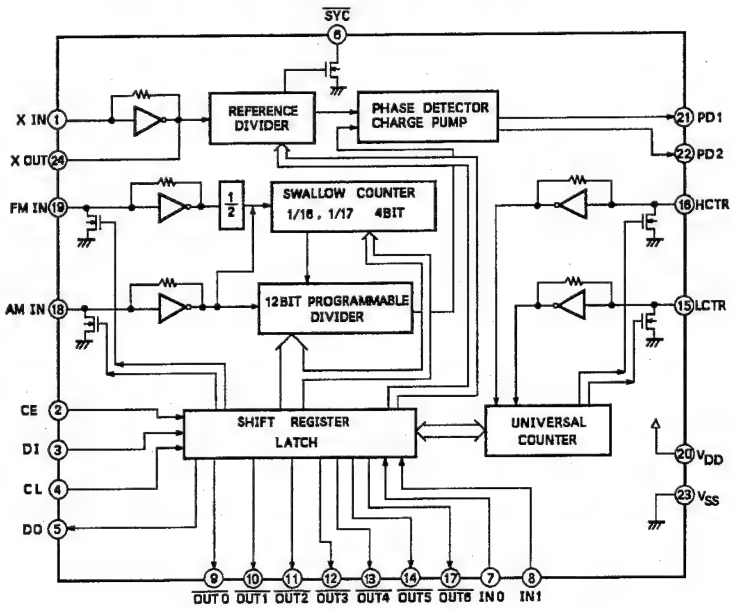
MC14066BFL1 : IC004, 201



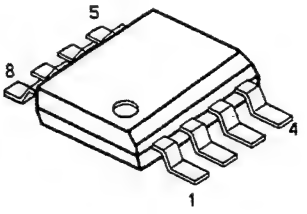


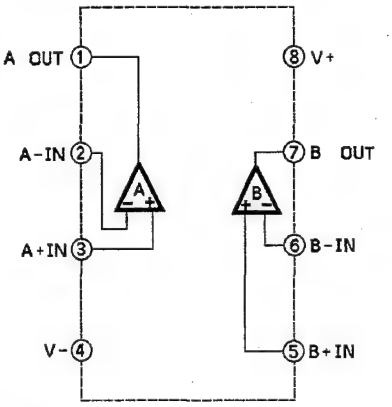
LC7219 : IC005



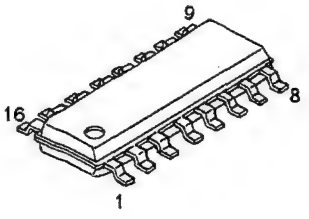


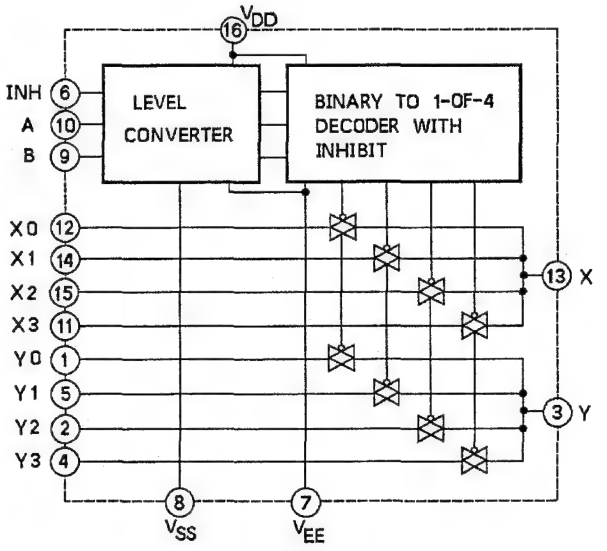
BA4558FH
XRA4558FH] : IC006, 007
NJM4560E : IC202~204, 213
M5238FP : IC205, 208, 209
NJM5532M : IC207, 211, 212
NJM2904M : IC803



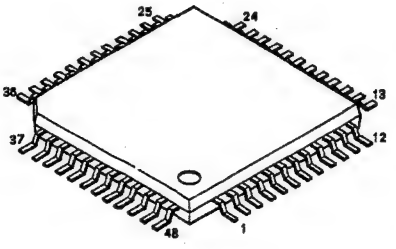


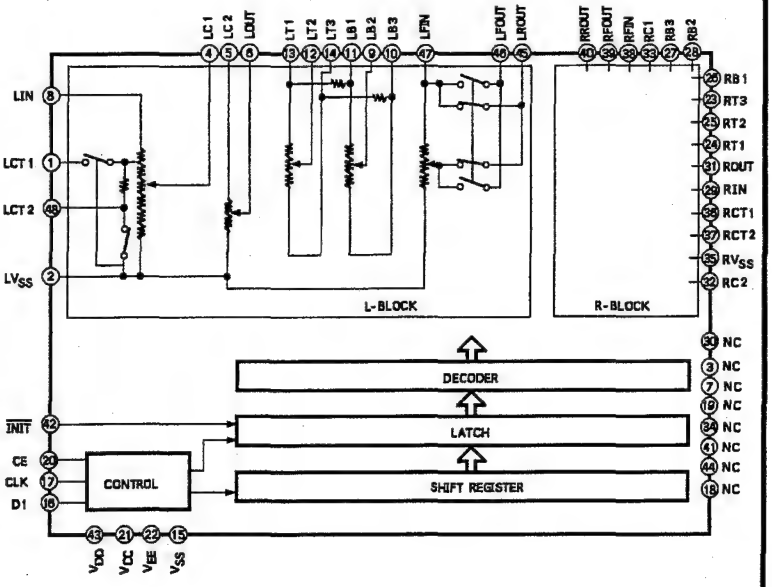
MC14052BFL1 : IC206



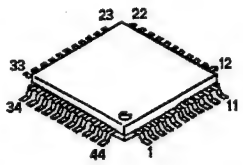


LC7537AN : IC210



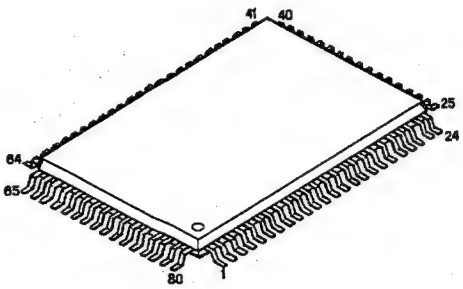


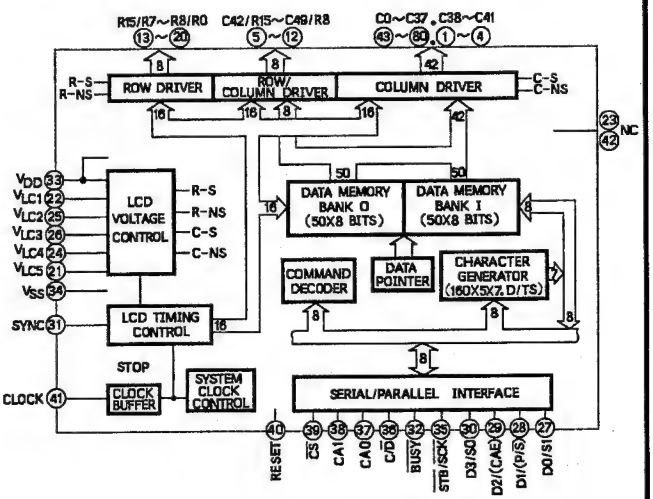
45551W01 : IC401



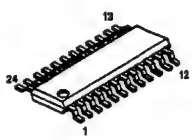
PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O
1	$\overline{\text{LCD CSA}}$	O	23	$\overline{\text{KEY S4}}$	O
2	$\overline{\text{LCD CSB}}$	O	24	$\overline{\text{KEY S5}}$	O
3	LCD RESET	O	25	$\overline{\text{KEY S6}}$	O
4	$\overline{\text{LCD BUSY}}$	I	26	NC	—
5	NC	—	27	LED RESET	O
6	LED-OE	O	28	POWER ON	O
7	LED LOAD	O	29	DISP DATA	I
8	KEY R0	I	30	KEY DATA	O
9	KEY R1	I	31	$\overline{\text{DISP CLK}}$	I
10	KEY R2	I	32	GND	—
11	KEY R3	I	33	GND	—
12	NC	—	34	NC	—
13	$\overline{\text{KEY S0}}$	O	35	GND	—
14	$\overline{\text{KEY S1}}$	O	36	DISP REQ	I
15	$\overline{\text{KEY S2}}$	O	37	$\overline{\text{REMOCON}}$	I
16	$\overline{\text{KEY S3}}$	O	38	V_{DD}	—
17	GND	—	39	V_{DD}	—
18	GND	—	40	NC	—
19	NC	—	41	LCD CLK	O
20	$\overline{\text{RESET}}$	I	42	LCD C/D	O
21	X_1	—	43	SCK	O
22	X_2	—	44	DATA	O

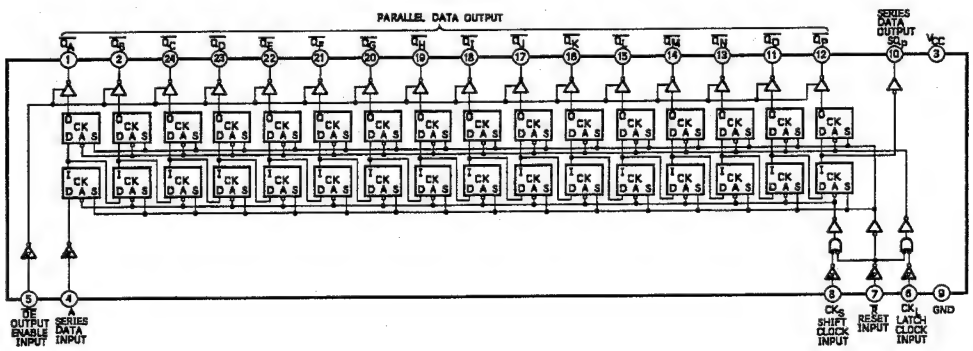
μPD7228AG : IC402
μPD7229AGF : IC403



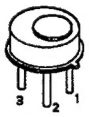


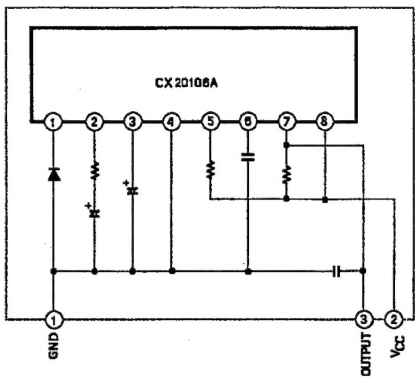
M66311FP : IC404



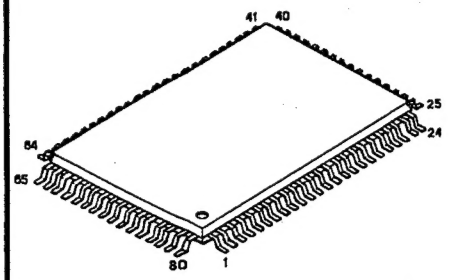


BX1408 : IC405



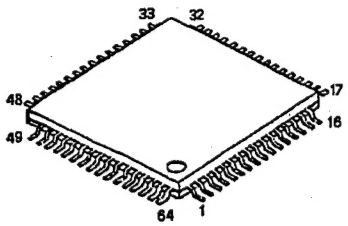


45609W05 : IC501



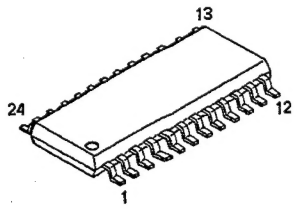
PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O
1	DISP ON/OFF	I	23	DISP POW	O	45	DTS-START	O	67	V_{SS}	—
2	AV_{REF}	I	24	DA CLK	O	46	DTS-MUTE	I	68	DYNAS 1.2	O
3	V_{DD}	—	25	DA-DATA	O	47	A-HOLD	I	69	DYNAS ON	O
4	V_{DD}	—	26	DA-LT	O	48	BUS IN	I	70	PROCER	O
5	AMBER	O	27	EVOL-CLK	O	49	INTRO 2VCK	I	71	E2PROM CLK	O
6	WHITE	O	28	EVOL DATA	O	50	DTS-STS	I	72	E2PROM DI	O
7	ANTI-LED	O	29	EVOL CE	O	51	DTS-CMD	O	73	V_{SS}	—
8	P-CONT	O	30	SRS.CNT1	O	52	DTS-CLK	I	74	E2PROM DO	I
9	V-CONT	O	31	SRS.CNT2	O	53	B-HOLD	I	75	V_{SS}	—
10	$\overline{MUTE}$	O	32	INTRO-CE	O	54	V_{SS}	—	76	V_{SS}	—
11	O-INT	O	33	V_{SS}	—	55	XT_1	—	77	FIXED ON/OFF	I
12	O-REM	O	34	INTRO-D3	I/O	56	XT_2	—	78	V_{SS}	—
13	I-INT	I	35	INTRO-D2	I/O	57	V_{SS}	—	79	V_{SS}	—
14	I-PAU	I	36	INTRO-D1	I/O	58	X_1	I	80	V_{SS}	—
15	RECAL	I	37	INTRO-D0	I/O	59	X_2	—			
16	DISP SW	I	38	INTRO-PD	O	60	$\overline{RESET}$	I			
17	KEY DATA	I	39	INTRO-RD	O	61	V_{SS}	—			
18	DISP DATA	O	40	INTRO-WT	O	62	V_{SS}	—			
19	DISP CLK	O	41	BUS OUT	O	63	V_{SS}	—			
20	DTS STBY	O	42	ALARM ON	O	64	V_{SS}	—			
21	DISP REQ	O	43	SO/ALARM	O	65	V_{SS}	—			
22	DISP RST	O	44	DTS-CE	O	66	V_{SS}	—			

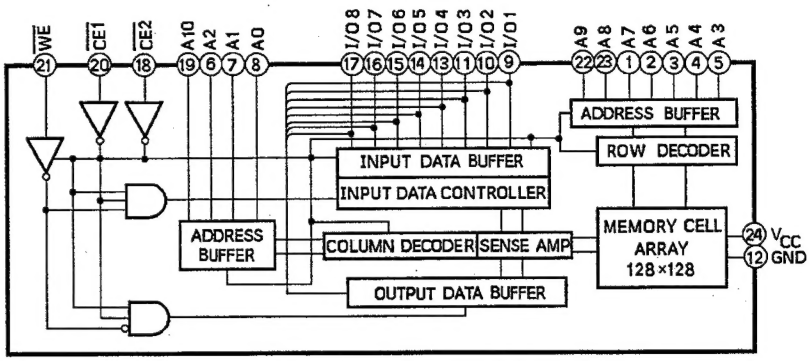
45258W01 : IC502



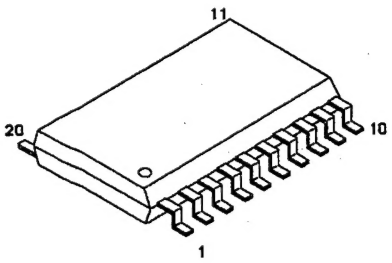
PIN NO.	CORD ADDRESS	I/O	PIN NO.	CORD ADDRESS	I/O	PIN NO.	CORD ADDRESS	I/O
1	CE1	O	23	AD2	I/O	45	$\overline{SK}$	I
2	NC	—	24	GND	—	46	SEARCH	I
3	$\overline{DTS\ MUTE}$	O	25	AD1	I/O	47	MALTI PATH	I
4	$\overline{7073\ RESET}$	O	26	AD0	I/O	48	$\overline{ADJON}$	I
5	50K REF	O	27	LE	O	49	S-METER	I
6	$\overline{RESET}$	I	28	DTS STB	I	50	$\overline{DK}$	I
7	X2	O	29	RDS CLK	I	51	$\overline{RDS}$	I
8	X1	I	30	D. START	I	52	CLK	O
9	V_{SS}	—	31	DATA	I	53	DATA OUT	O
10	CE2-1	O	32	DATA IN	I	54	$\overline{LPF\ SW}$	O
11	CE2-2	O	33	AUDIO IN	I	55	$\overline{IF\ MUTE}$	O
12	NC	—	34	DTS-START	I	56	CE	—
13	NC	—	35	DTS-CMD	I	57	NC	—
14	NC	—	36	NC	—	58	LW	O
15	A10	O	37	NC	—	59	FM/$\overline{MW}$-$\overline{LW}$	O
16	A9	O	38	DTS-CLK	I	60	L/$\overline{D}$	O
17	A8	O	39	DTS-STS	O	61	MONO	O
18	AD7	I/O	40	CA	I	62	CE	I
19	AD6	I/O	41	V_{DD}	—	63	SD	I
20	AD5	I/O	42	A.V_{SS}	—	64	$\overline{WR}$	O
21	AD4	I/O	43	A.V_{REF}	I			
22	AD3	I/O	44	$\overline{ST}$	I			

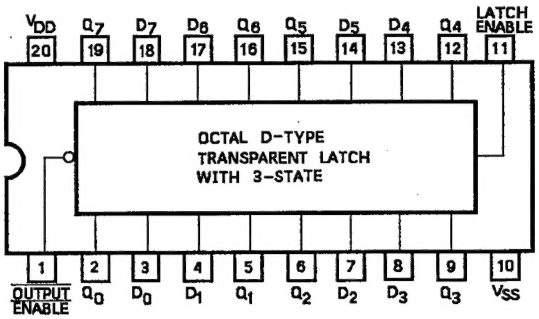
LC3516AML : IC503



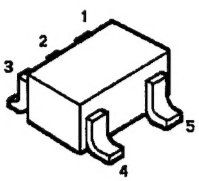


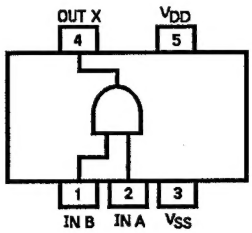
μPD74HC373 : IC504



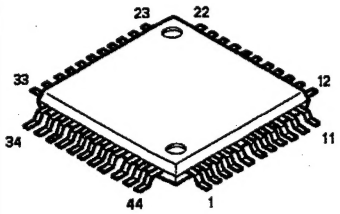


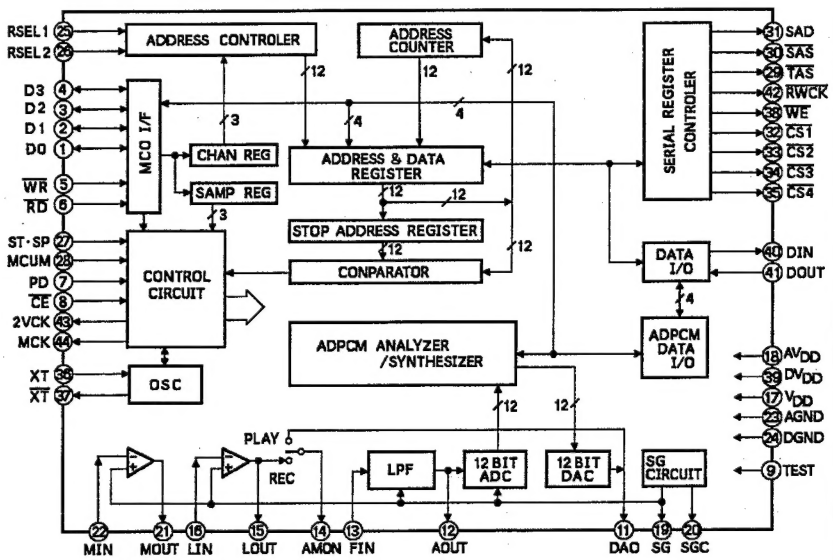
TC4S81F : IC505



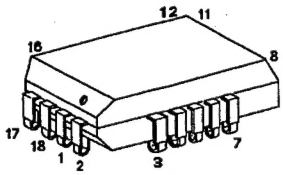


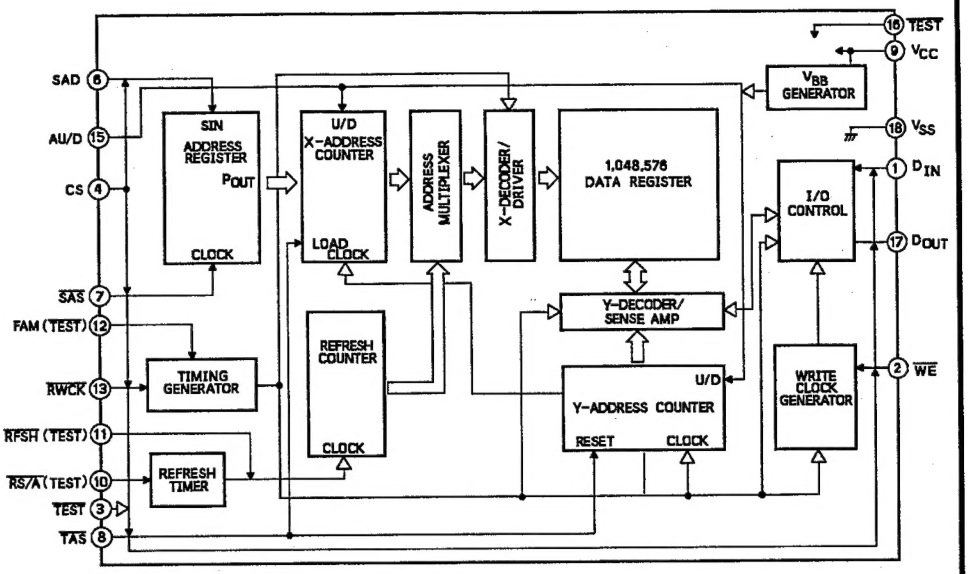
MSM6388GS : IC507



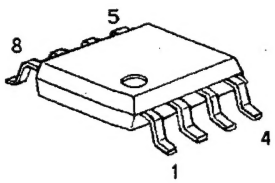


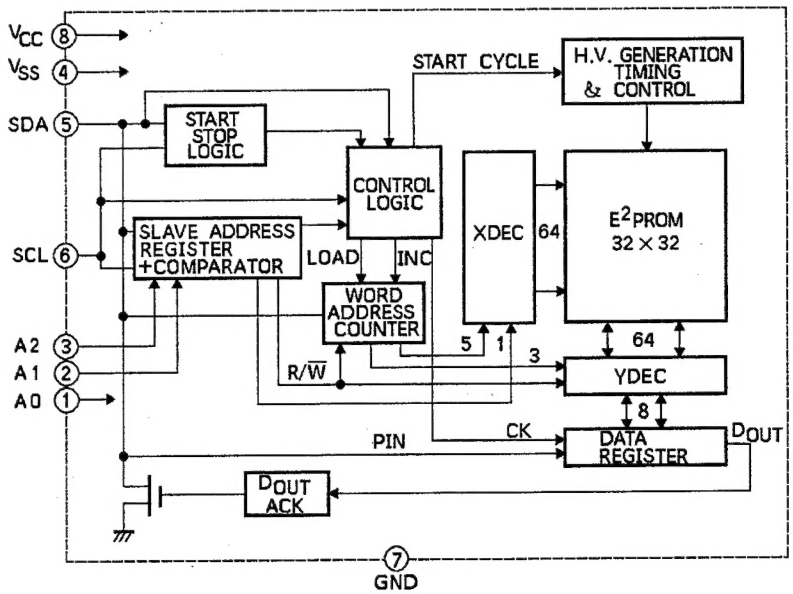
MSM6389JS : IC508



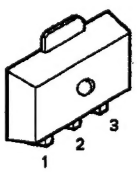


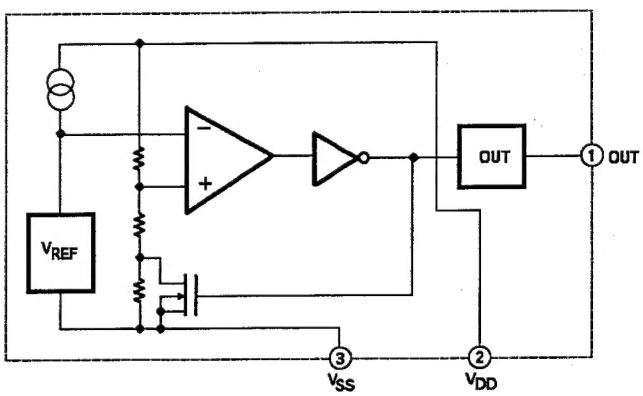
X24LC04SI : IC509



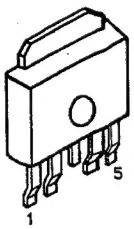


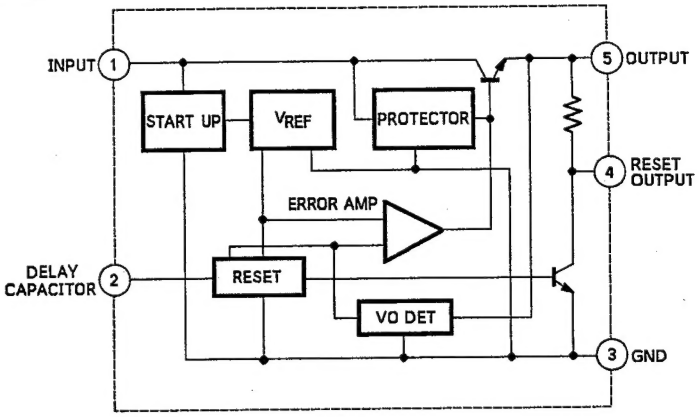
S-8052HNM-CR : IC510





L78LR05DFA : IC801





μPD6325 : IC802